

# CCD-TR42/TR70/TR72/TR80/TR82/ TR400/TR430/TR550/TR750

**RMT-708**

## SERVICE MANUAL



Photo : CCD-TR42



*US Model*

CCD-TR70/TR72/TR80/TR82/TR400

*Canadian Model*

CCD-TR42/TR70/TR80/TR82/TR400

*E Model*

CCD-TR430/TR550/TR750

*Tourist Model*

CCD-TR550/TR750

**Handycam**

**A MECHANISM**

We will inform you of the electrical adjustment of the color view finder in the future.

In this service manual, board names will be different for each model and indicated as follows.

	TR42/TR70/TR82/TR550	TR72/TR80/TR400/TR430/TR750
VC BOARD	VC-145 BOARD	VC-138 BOARD
VS BOARD	VS-112 BOARD	VS-104 BOARD
DD BOARD	DD-66 BOARD	DD-60 BOARD

**For MECHANISM ADJUSTMENTS, refer to the  
"8 mm Video MECHANICAL ADJUSTMENT  
MANUAL IV" (9-973-199-11).**

### SPECIFICATIONS

#### System

**Video recording system:** Two rotary heads, Helical scanning, FM system

**Audio recording system:** Rotary heads, FM system

**Video signal:** NTSC color, EIA standards

**Usable cassette:** 8 mm video format cassette (standard 8 mm)

**Tape speed:** <SP mode> Approx. 19/32 inches (1.43 cm)/second, <LP mode> Approx. 5/16 inches (0.72 cm)/second (playback only)

**Recording time:** SP mode 2 hours (P6-120)

**Playback time:** <SP mode> 2 hours (P6-120), <LP mode> 4 hours (P6-120)

**Fastforward/rewind time:** Approx. 6 min. 30 sec. (P6-120)

**Image device:** CCD (Charge Coupled Device)

**Viewfinder:** See the table on the next page.

**Lens:** See the table on the next page.

**Color temperature:** Auto

**Minimum illumination:** See the table on the next page.

**Illumination range:** See the table on the next page.

**Recommended illumination:** More than 100 lx

#### Output connector

**Video output:** Phono jack, 1 Vp-p, 75 Ω, unbalanced, sync negative

**Audio output:** See the table on the next page.

**RFU DC OUT:** Special minijack, DC 5 V

**Headphones/Earphone jack:** See the table on the next page.

**LANC jack:** Stereo mini-minijack (ø 2.5 mm)

**MIC jack:** See the table on the next page.

#### General

**Power requirements:** On battery mounting surface 6.0 V (battery pack), 7.5 V (AC power adaptor)

**Average power consumption:** See the table on the next page.

**Installation:** Vertically, Horizontally

**Operating temperature:** 32°F to 104°F (0°C to 40°C)

**Storage temperature:** -4°F to +140°F (-20°C to +60°C)

**Dimensions:** See the table on the next page.

**Mass:** See the table on the next page.

**Microphone:** See the table on the next page.

— Continued on next page —

**8 VIDEO CAMERA RECORDER**

CCD-TR42/TR70/TR72/TR80/TR82/TR430/TR550

**Hi 8 VIDEO CAMERA RECORDER**

CCD-TR400/TR750

**SONY®**



# CCD-TR42/TR70/TR72/TR80/TR82/ TR400/TR430/TR550/TR750

**RMT-700**

## SERVICE MANUAL



Photo : CCD-TR42

**US Model**  
CCD-TR42/TR70/TR72/TR80/TR82

**Canadian Model**  
CCD-TR42A/TR70A/TR72A/TR80A/TR82A

**E Model**  
CCD-TR420/TR700/TR720/TR800/TR820

**Tourist Model**  
CCD-TR600/TR750

**Handycam**

**A. MECHANISM**

We will show you the electrical adjustment of this camcorder (Refer to the below).

To be performance, best result will be obtained by well maintenance and tuning.

TR42/TR70/TR72/TR80		TR400/TR430/TR550/TR750
VG BOARD	VG-116 BOARD	VG-116 BOARD
VS BOARD	VS-111 BOARD	VS-106 BOARD
CS BOARD	CS-88 BOARD	CS-88 BOARD

For MECHANISM ADJUSTMENTS, refer to the  
"E-100 VIDEO MECHANICAL ADJUSTMENT  
ROUTING" (P.7) (RMT-700-11).

### SPECIFICATIONS

#### System

Video recording system: Two  
channel: Audio, Video recording,  
Still system

Audio recording system: Stereo  
system, Hi-Fi system

Video signal: NTSC system, PAL  
system

Audio cassette: Cassette video  
format: cassette (standard) 1/2 inch

Frame speed: -off (under: Approx.  
18/1000sec) (PAL system), 1/50sec  
(off under: Approx. 1/50sec)  
(NTSC system) (playback only)  
Recording time: 30 (under: 1 hour)  
(PAL), 30  
(NTSC)

Playback time: -off (under: 1  
hour) (PAL), -off (under: 1  
hour) (NTSC)

Resolution: Standard line  
approx. 400 lines (PAL), 400  
lines (NTSC) (1/2 inch type)  
Composite (NTSC)

#### Measurement for the table on the next page

Color filter: Horizontal on the next page

Color temperature: Auto

White balance: Manual (for the

table on the next page)

Black level: Auto (for the table

on the next page)

Horizontal synchronization

Auto (for the table on the

next page)

Output connector

Video output: 30 pin, 1/2 inch

Audio: 30 pin, 1/2 inch

Audio output: 30 pin, 1/2 inch

on the next page

Still: 30 pin, 1/2 inch

Still: 30 pin, 1/2 inch

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Still: 30 pin, 1/2 inch

Still: 30 pin, 1/2 inch

#### General

Power requirement: Co. battery

approx. 1.5 (1.5) (approx. 1.5)

Approx. power consumption

for the table on the next page

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**VIDEO CAMERA RECORDER**  
CCD-TR42/TR70/TR72/TR80/TR82

**VIDEO CAMERA RECORDER**  
CCD-TR400/TR430/TR550/TR750

**SONY**





Model	CCD-TR42	CCD-TR70	CCD-TR72	CCD-TR80	CCD-TR82	Notes
Viewfinder	B/W	Color	B/W	Color	B/W	Electronic viewfinder
Lens	12 x	10 x	12 x			Combined power zoom lens, Filter diameter 1 1/2 inches (37 mm), TTL autofocus system inner focus wide macro system
Focal distance f =	7/32 – 2 5/8 in (5.4 – 64.8 mm)	7/32 – 2 1/4 in (5.4 – 54 mm)	7/32 – 2 5/8 in (5.4 – 64.8 mm)			—
	—				9/32 – 3 1/8 in (6.5 – 78 mm)	at Steady Shot
	1 9/16 – 18 1/2 in (39 – 468 mm)	1 9/16 – 15 3/8 in (39 – 390 mm)	1 9/16 – 18 1/2 in (39 – 468 mm)		1 7/8 – 22 1/4 in (47 – 564 mm)	When converted into a 35-mm still camera
Minimum illuminations	2 lx				5 lx	F 1.8
Illumination range	2 – 100,000 lx				5 – 100,000 lx	—
Audio output	Monaural		2: stereo L and R		Monaural	Phono jack 7.5 dBs, (at output impedance 47 kΩ) impedance less than 2.2 kΩ
Headphones/ Earphone jack	Minijack		Stereo minijack		Minijack	—
MIC jack	Minijack		Stereo minijack		Minijack	–66 dBs low impedance with 2.5 to 3 V DC, output impedance 6.8 kΩ (ø 3.5 mm)
Average power consumption	4.9 W	5.2 W	5.0 W	5.3 W	5.4 W	Camera recording, including the viewfinder
Dimensions	4 1/2 x 4 3/8 x 8 1/4 inches (114 x 110 x 207 mm)		4 1/2 x 4 3/8 x 8 1/4 inches (114 x 110 x 208 mm)		4 1/2 x 4 3/8 x 8 1/4 inches (114 x 110 x 207 mm)	w/h/d
Mass	1 lb 15 oz (890 g)	1 lb 15 oz (880 g)	1 lb 15 oz (890 g)	1 lb 15 oz (880 g)	1 lb 15 oz (900 g)	Excluding the battery pack, lithium battery, cassette, and shoulder strap
Mass	2 lb 7 oz (1,110 g)				2 lb 8 oz (1,120 g)	Including the battery pack NP-55, lithium battery CR2025, cassette P6-120, and shoulder strap
Microphone	Monaural		Stereo		Monaural	Electret condenser microphone

— Continued on next page —



### AC power adaptor

**Power requirements:** 110 – 240 V AC\*, 50/60 Hz

**Power consumption:** See the table below.

**Output voltage:** See the table below.

**Application:** Sony battery packs NP-55, NP-55H, NP-60D, NP-66H, NP-77H, NP-80/80D

**Operating temperature:** 32°F to 104°F (0°C to 40°C)

**Storage temperature:** –4°F to +140°F (–20°C to +60°C)

**Dimensions:** Approx. 4 1/8 x 1 15/16 x 2 1/2 inches (103 x 49 x 63 mm) including projecting parts and controls

**Mass:** See the table below.

\* Canadian Standard Association (CSA) certifies 120 V AC only.

Model	AC-V25	AC-V25A	AC-V25B	Notes
Power consumption	15 W	17 W	17 W	—
Output voltage	7.5 V, 1.2 A	7.5 V, 1.5 A	7.5 V, 1.5 A	DC OUT in operating mode
Mass	10 oz (290 g)	11 oz (320 g)	10 oz (290 g)	—

Design and specifications are subject to change without notice.

Note :



We will inform you of the specification of the CCD-TR400/TR430/TR550/TR750 in the future.

## SAFETY CHECK-OUT


After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit board Repairing
  - Keep the temperature of the soldering iron around 270°C during repairing.
  - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
  - Be careful not to apply force on the conductor when soldering or unsoldering.

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

**All power supplies**

Power requirements (at 100 V)

AC\*, 100 W

Power consumption for the

table below

Output voltages for the table

below

Applications: base battery packs  
series on one 24 VDC 100 W unit,  
24 VDC, 24 VDC, 24 VDC

Operating temperature (at 100 V)

24 VDC 100 W

Storage temperature -40 to

+120°C (-40 to +120°F)

Dimensions approx. 100 x 100

x 100 mm (4.0 x 4.0 x 4.0 in.)

It must be installed in a secure place

and secured

to the table below

\* Canadian Standard Association

C22.2 no. 147 AC only

Model	AC-100	AC-100A	AC-100B	Notes
Power consumption	100 W	100 W	100 W	—
Output voltage	24 VDC, 100 W	24 VDC, 100 W	24 VDC, 100 W	DC OUT is operating mode
Size	100 x 100 mm	100 x 100 mm	100 x 100 mm	—

Design and specifications are  
subject to change without notice**Note:**

We will inform you of the specifications of the C22.2-147/147.1/147.2 in the future.

**SAFETY CHECK-OUT**After correcting the original service problem, perform the following  
safety check before releasing the unit to the customer:

1. Check the area of your repair for sustained or poorly sustained connections. Check the entire board surface for solder splashes and bridges.
2. Check the installed wiring to ensure that no wires are "pinched" or contact high-voltage sections.
3. Look for unscheduled replacement parts, particularly components that were installed during a previous repair. Make sure not to let the customer see unscheduled replacement.
4. Look for parts that, through functioning, show obvious signs of deterioration. Make them out to the customer and recommend their replacement.
5. Check the DC voltage levels if it is a device specified.
6. Perform Circuit Board Repeating
  - Keep the temperature of the soldering iron around 350°C during repeating.
  - Do not touch the soldering iron on the same resistance of the circuit board (within 1 hour).
  - The solder must apply to the conductor when soldering or resoldering.

**SAFETY-RELATED COMPONENT WARNING:**

COMPONENTS IDENTIFIED BY MARK **A** ON DOWEL-  
LINE WITH MARK **A** ON THE ADJUSTING DISK AND  
AND IN THE PARTS LIST ARE CRITICAL TO SAFE  
OPERATION. REPLACE THESE COMPONENTS WITH  
SPECIALLY MARKED PARTS. MAKE SURE THAT THE  
PARTS LISTED IN THE MANUAL, OR IN SUPPLEMENTARY  
PUBLISHED BY SONY.

**ATTENTION: ALL COMPONENTS MUST BE REPLACED  
BY A QUALIFIED PERSON.**

THE COMPONENTS IDENTIFIED BY MARK **A** ON DOWEL-  
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PUBLISHED BY SONY.

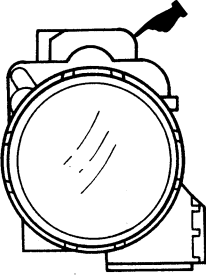
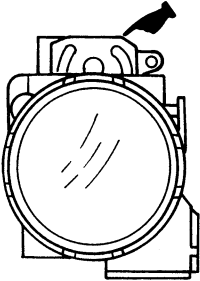
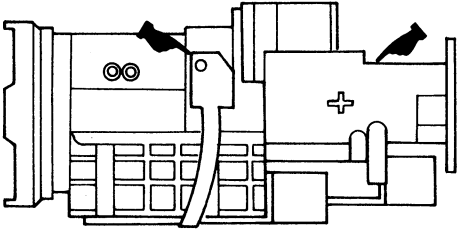
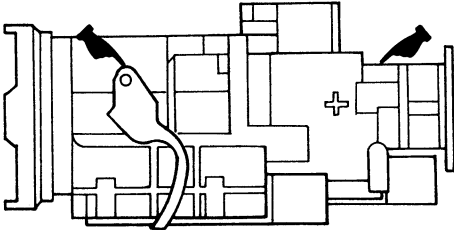
## 【Zoom lens】

This unit employs two types of lens.

Note that the lenses are interchangeable, however their components are not.

Differentiating the lens

 : difference point

TYPE I (LSV-140A)	TYPE II (VCL-5412WA)
From the front of the lens 	From the front of the lens 
From the right side of the lens (as seen from the front) 	From the right side of the lens (as seen from the front) 

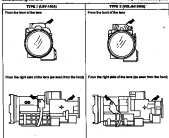
## [Zoom lens]

This unit employs two types of lens.

Note that the lenses are interchangeable, however their components are not.

### Differentiating the lens

①②③ : difference point



## TABLE OF CONTENTS

Section	Title	Page	Section	Title	Page
<b>SERVICE NOTE</b>			<b>3. BLOCK DIAGRAMS</b>		
Semiconductor for Correction List Display .....	8		3-1. Overall Block Diagram .....	3-1	
Parts Location Diagram Related to Power Supply .....	8		3-2. Camera Block Diagram .....	3-5	
Semiconductor Location .....	8		3-3. Video (1) Block Diagram .....	3-9	
Head Cleaning .....	8		3-4. Video (2) Block Diagram .....	3-14	
<b>1. GENERAL</b>			3-5. Servo Block Diagram .....	3-17	
Checking Your Model Number .....	1-1		3-6. System Control Block Diagram .....	3-20	
Checking Supplied Accessories .....	1-1		3-7. Audio (STEREO) Block Diagram (TR72/TR80/TR400/TR430/TR750) .....	3-23	
Charging and Installing the Battery Pack .....	1-2		3-8. Audio (MONO) Block Diagram (TR42/TR70/TR82/TR550) .....	3-25	
Inserting a Cassette .....	1-3		3-9. W/B EVF Block Diagram (TR42/TR72/TR82/TR400/TR430/TR550/TR750) .....	3-27	
Adjusting the Viewfinder Lens .....	1-4		3-10. Color EVF Block Diagram (TR70/TR80) .....	3-28	
Camera Recording .....	1-4		3-11. Power Block Diagram .....	3-30	
Hints for Better Shooting .....	1-6		<b>4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS</b>		
Checking the Recorded Picture .....	1-6		4-1. Frame Schematic Diagram .....	4-1	
Connections for Playback .....	1-7		4-2. Printed Wiring Boards and Schematic Diagrams .....	4-4	
Playing Back a Tape .....	1-7		• FP-89 Board .....	4-5	
Using Alternate Power Sources .....	1-8		• FP-49 Board (TR82/TR400/TR550/TR750) .....	4-7	
Recording with the Date or Time .....	1-9		• VC (Camera, Lens Drive, Steady Shot Control) Board .....	4-9	
Shooting with Backlighting .....	1-9		• VC (Camera) Board .....	4-11	
Using the PROGRAM AE Function .....	1-10		• VC (Lens Drive) Board .....	4-17	
Fade-in and Fade-out .....	1-10		• VC (Steady Shot Control) Board (TR82/TR400/TR550/TR750) .....	4-19	
Releasing the Steady Shot Function .....	1-11		• VS (REC/PB Head Amplifier, Y/C Process, Hi8 I/O, Electric Volume, Servo/System Control, Signal I/O) .....	4-21	
Changing the Mode Settings .....	1-11		• VS (REC/PB Head Amplifier) Board .....	4-25	
Editing onto Another Tape .....	1-13		• VS (Y/C Process) Board .....	4-28	
Changing the Lithium Battery in the Camcorder .....	1-14		• VS (Hi8 I/O, Electric Volume) Board .....	4-31	
Resetting the Date and Time .....	1-14		• VS (Servo/System Control) Board .....	4-34	
Playback Modes .....	1-15		• VS (Signal I/O) Board .....	4-37	
Tips for Using the Battery Pack .....	1-15		• HE-14 Board .....	4-41	
Maintenance Information and Precautions .....	1-17		• ZB-2 Board .....	4-45	
Identifying the Parts .....	1-18		• SL-38 Board .....	4-47	
Warning Indicators .....	1-21		• AU-169 Board (TR42/TR70/TR82/TR550) .....	4-51	
<b>2. DISASSEMBLY</b>			• MA-199 Board (TR42/TR70/TR82/TR550) .....	4-55	
2-1. Removal of F Panel Block .....	2-1		• AU-165 Board (TR72/TR80/TR400/TR430/TR750) ..	4-59	
2-2. Removal of Cassette Lid Assembly .....	2-1		• MA-179 Board (TR72/TR80/TR400/TR430/TR750) ..	4-64	
2-3. Removal of Cabinet (L) Assembly .....	2-2		• VF-65 Board (TR42/TR72/TR82/TR400/TR430/TR550/TR750) .....	4-67	
2-4. Removal of Cabinet (R) Assembly .....	2-2		• VF-66, VF-67, LB-35 Boards (TR70/TR80) .....	4-70	
2-5. Removal of EVF Assembly (TR42/TR72/TR82/TR400/TR430/TR550/TR750) .....	2-3		• DD Board .....	4-77	
2-5. Removal of EVF Assembly (TR70/TR80) .....	2-3		4-3. Semiconductors .....	4-81	
2-6. Removal of Control Switch Block (CK) .....	2-4		<b>5. REPAIR PARTS LIST</b>		
2-7. Removal of DD-60 Board (TR72/TR80/TR400/TR430/TR750) Removal of DD-66 Board (TR42/TR70/TR82/TR550) ..	2-4		5-1. Exploded Views .....	5-1	
2-8. Removal of Terminal Board and AU-165 Board (TR72/TR80/TR400/TR430/TR750), AU-169 Board (TR42/TR70/TR82/TR550) .....	2-5		5-1-1. F Panel Block Assembly .....	5-1	
2-9. Removal of Zoom Lens Block and VC-138 Board (TR72/TR80/TR400/TR430/TR750), VC-145 Board (TR42/TR70/TR82/TR550) .....	2-5		5-1-2. Cabinet (L) Block Assembly .....	5-2	
2-10. Removal of VS-104 Board (TR72/TR80/TR400/TR430/TR750) Removal of VS-112 Board (TR42/TR70/TR82/TR550) .....	2-6		5-1-3. Cabinet (R) Block Assembly .....	5-3	
2-11. Removal of SL-38 Board .....	2-6		5-1-4. EVF Block Assembly .....	5-4	
2-12. Remove of Control Switch Block (FK) .....	2-6		5-1-5. Main Boards Assembly .....	5-5	
2-13. Internal Views .....	2-7		5-1-6. CCD Block Assembly .....	5-6	
2-14. Circuit Boards Location .....	2-8		5-1-7. Zoom Lens Assemblies (LSV-140A) (VCL-5412WA) .....	5-7	
			5-1-8. Cassette Compartment Assembly .....	5-8	
			5-1-9. LS Chassis Assembly .....	5-9	
			5-1-10. Mechanism Chassis Assembly (1) .....	5-10	
			5-1-11. Mechanism Chassis Assembly (2) .....	5-11	
			5-2. Electrical Parts List .....	5-12	
			HARDWARE LIST .....	5-41	

THESE

Topic	Page	Topic	Page
<b>SERVICE NOTE</b>			
Barcode Label for Connection Ltd. Shipping	9	5.1. Frontal Neck Chaperon	3-1
Parts Location Diagram/Related to Power Supply	9	5.2. Control Neck Chaperon	3-2
Barcode Label for Location	9	5.3. Side (L) Neck Chaperon	3-3
Reset Chaperon	9	5.4. Side (R) Neck Chaperon	3-4
<b>1. GENERAL</b>			
Checking Your Model Number	1-1	5.5. Rear Neck Chaperon	3-7
Checking Supplied Accessories	1-1	5.6. System Control Neck Chaperon	3-8
Checking and Loading the Safety Pad	1-2	5.7. Audio-PT (PT) Neck Chaperon	3-9
Inserting a Cassette	1-3	5.8. Audio-PT (PT) Neck Chaperon	3-9
Adjusting the Viewfinder Lens	1-3	5.9. Video-PT (PT) Neck Chaperon	3-10
Camera Focusing	1-4	5.10. Video-PT (PT) Neck Chaperon	3-10
Using the Audio Monitor	1-5	5.11. Power Neck Chaperon	3-11
Checking the Recorded Picture	1-6	<b>6. FRONTAL VIEWING (FRONTAL AND SIDEVIEW) CHAPERONS</b>	
Accessories for Playback	1-7	6.1. Frontal Viewing Chaperon	3-1
Playing Back a Tape	1-7	6.2. Sideview Viewing Chaperon	3-1
Using Alternative Power Sources	1-8	6.3. Frontal Viewing Chaperon	3-1
Recording with the Side or Top	1-9	6.4. Sideview Viewing Chaperon	3-1
Recording with the Sideview	1-9	6.5. Frontal Viewing Chaperon	3-1
Using the PT (PT) (PT) Position	1-10	6.6. Sideview Viewing Chaperon	3-1
Picture and Audio	1-10	6.7. Frontal Viewing Chaperon	3-1
Returning the Ready View Position	1-11	6.8. Sideview Viewing Chaperon	3-1
Changing the Audio Settings	1-11	6.9. Frontal Viewing Chaperon	3-1
Editing into Another Tape	1-12	6.10. Sideview Viewing Chaperon	3-1
Changing the Audio Setting in the Camera	1-12	6.11. Frontal Viewing Chaperon	3-1
Recording the Date and Time	1-13	6.12. Sideview Viewing Chaperon	3-1
Playback Index	1-13	6.13. Frontal Viewing Chaperon	3-1
Tip for Using the Safety Pad	1-13	6.14. Sideview Viewing Chaperon	3-1
Microphone Interference and Positioning	1-17	6.15. Frontal Viewing Chaperon	3-1
Mounting the Pad	1-18	6.16. Sideview Viewing Chaperon	3-1
Warning Indicators	1-18	6.17. Frontal Viewing Chaperon	3-1
<b>2. DISASSEMBLY</b>			
2-1. Removal of Front Neck	2-1	6.18. Sideview Viewing Chaperon	3-1
2-2. Removal of Cassette Deck Assembly	2-1	6.19. Frontal Viewing Chaperon	3-1
2-3. Removal of Video (L) Assembly	2-2	6.20. Sideview Viewing Chaperon	3-1
2-4. Removal of Control (R) Assembly	2-2	6.21. Frontal Viewing Chaperon	3-1
2-5. Removal of VIF Assembly	2-2	6.22. Sideview Viewing Chaperon	3-1
2-6. Removal of VIF Assembly (PT/PT)	2-2	6.23. Frontal Viewing Chaperon	3-1
2-7. Removal of Control (R) Assembly (PT)	2-2	6.24. Sideview Viewing Chaperon	3-1
2-8. Removal of DO (R) Assembly	2-2	6.25. Frontal Viewing Chaperon	3-1
2-9. Removal of DO (R) Assembly (PT/PT)	2-2	6.26. Sideview Viewing Chaperon	3-1
2-10. Removal of DO (R) Assembly (PT/PT)	2-2	6.27. Frontal Viewing Chaperon	3-1
2-11. Removal of DO (R) Assembly (PT/PT)	2-2	6.28. Sideview Viewing Chaperon	3-1
2-12. Removal of DO (R) Assembly (PT/PT)	2-2	6.29. Frontal Viewing Chaperon	3-1
2-13. Removal of DO (R) Assembly (PT/PT)	2-2	6.30. Sideview Viewing Chaperon	3-1
2-14. Removal of DO (R) Assembly (PT/PT)	2-2	6.31. Frontal Viewing Chaperon	3-1
2-15. Removal of DO (R) Assembly (PT/PT)	2-2	6.32. Sideview Viewing Chaperon	3-1
2-16. Removal of DO (R) Assembly (PT/PT)	2-2	6.33. Frontal Viewing Chaperon	3-1
2-17. Removal of DO (R) Assembly (PT/PT)	2-2	6.34. Sideview Viewing Chaperon	3-1
2-18. Removal of DO (R) Assembly (PT/PT)	2-2	6.35. Frontal Viewing Chaperon	3-1
2-19. Removal of DO (R) Assembly (PT/PT)	2-2	6.36. Sideview Viewing Chaperon	3-1
2-20. Removal of DO (R) Assembly (PT/PT)	2-2	6.37. Frontal Viewing Chaperon	3-1
2-21. Removal of DO (R) Assembly (PT/PT)	2-2	6.38. Sideview Viewing Chaperon	3-1
2-22. Removal of DO (R) Assembly (PT/PT)	2-2	6.39. Frontal Viewing Chaperon	3-1
2-23. Removal of DO (R) Assembly (PT/PT)	2-2	6.40. Sideview Viewing Chaperon	3-1
2-24. Removal of DO (R) Assembly (PT/PT)	2-2	6.41. Frontal Viewing Chaperon	3-1
2-25. Removal of DO (R) Assembly (PT/PT)	2-2	6.42. Sideview Viewing Chaperon	3-1
2-26. Removal of DO (R) Assembly (PT/PT)	2-2	6.43. Frontal Viewing Chaperon	3-1
2-27. Removal of DO (R) Assembly (PT/PT)	2-2	6.44. Sideview Viewing Chaperon	3-1
2-28. Removal of DO (R) Assembly (PT/PT)	2-2	6.45. Frontal Viewing Chaperon	3-1
2-29. Removal of DO (R) Assembly (PT/PT)	2-2	6.46. Sideview Viewing Chaperon	3-1
2-30. Removal of DO (R) Assembly (PT/PT)	2-2	6.47. Frontal Viewing Chaperon	3-1
2-31. Removal of DO (R) Assembly (PT/PT)	2-2	6.48. Sideview Viewing Chaperon	3-1
2-32. Removal of DO (R) Assembly (PT/PT)	2-2	6.49. Frontal Viewing Chaperon	3-1
2-33. Removal of DO (R) Assembly (PT/PT)	2-2	6.50. Sideview Viewing Chaperon	3-1
2-34. Removal of DO (R) Assembly (PT/PT)	2-2	6.51. Frontal Viewing Chaperon	3-1
2-35. Removal of DO (R) Assembly (PT/PT)	2-2	6.52. Sideview Viewing Chaperon	3-1
2-36. Removal of DO (R) Assembly (PT/PT)	2-2	6.53. Frontal Viewing Chaperon	3-1
2-37. Removal of DO (R) Assembly (PT/PT)	2-2	6.54. Sideview Viewing Chaperon	3-1
2-38. Removal of DO (R) Assembly (PT/PT)	2-2	6.55. Frontal Viewing Chaperon	3-1
2-39. Removal of DO (R) Assembly (PT/PT)	2-2	6.56. Sideview Viewing Chaperon	3-1
2-40. Removal of DO (R) Assembly (PT/PT)	2-2	6.57. Frontal Viewing Chaperon	3-1
2-41. Removal of DO (R) Assembly (PT/PT)	2-2	6.58. Sideview Viewing Chaperon	3-1
2-42. Removal of DO (R) Assembly (PT/PT)	2-2	6.59. Frontal Viewing Chaperon	3-1
2-43. Removal of DO (R) Assembly (PT/PT)	2-2	6.60. Sideview Viewing Chaperon	3-1
2-44. Removal of DO (R) Assembly (PT/PT)	2-2	6.61. Frontal Viewing Chaperon	3-1
2-45. Removal of DO (R) Assembly (PT/PT)	2-2	6.62. Sideview Viewing Chaperon	3-1
2-46. Removal of DO (R) Assembly (PT/PT)	2-2	6.63. Frontal Viewing Chaperon	3-1
2-47. Removal of DO (R) Assembly (PT/PT)	2-2	6.64. Sideview Viewing Chaperon	3-1
2-48. Removal of DO (R) Assembly (PT/PT)	2-2	6.65. Frontal Viewing Chaperon	3-1
2-49. Removal of DO (R) Assembly (PT/PT)	2-2	6.66. Sideview Viewing Chaperon	3-1
2-50. Removal of DO (R) Assembly (PT/PT)	2-2	6.67. Frontal Viewing Chaperon	3-1
2-51. Removal of DO (R) Assembly (PT/PT)	2-2	6.68. Sideview Viewing Chaperon	3-1
2-52. Removal of DO (R) Assembly (PT/PT)	2-2	6.69. Frontal Viewing Chaperon	3-1
2-53. Removal of DO (R) Assembly (PT/PT)	2-2	6.70. Sideview Viewing Chaperon	3-1
2-54. Removal of DO (R) Assembly (PT/PT)	2-2	6.71. Frontal Viewing Chaperon	3-1
2-55. Removal of DO (R) Assembly (PT/PT)	2-2	6.72. Sideview Viewing Chaperon	3-1
2-56. Removal of DO (R) Assembly (PT/PT)	2-2	6.73. Frontal Viewing Chaperon	3-1
2-57. Removal of DO (R) Assembly (PT/PT)	2-2	6.74. Sideview Viewing Chaperon	3-1
2-58. Removal of DO (R) Assembly (PT/PT)	2-2	6.75. Frontal Viewing Chaperon	3-1
2-59. Removal of DO (R) Assembly (PT/PT)	2-2	6.76. Sideview Viewing Chaperon	3-1
2-60. Removal of DO (R) Assembly (PT/PT)	2-2	6.77. Frontal Viewing Chaperon	3-1
2-61. Removal of DO (R) Assembly (PT/PT)	2-2	6.78. Sideview Viewing Chaperon	3-1
2-62. Removal of DO (R) Assembly (PT/PT)	2-2	6.79. Frontal Viewing Chaperon	3-1
2-63. Removal of DO (R) Assembly (PT/PT)	2-2	6.80. Sideview Viewing Chaperon	3-1
2-64. Removal of DO (R) Assembly (PT/PT)	2-2	6.81. Frontal Viewing Chaperon	3-1
2-65. Removal of DO (R) Assembly (PT/PT)	2-2	6.82. Sideview Viewing Chaperon	3-1
2-66. Removal of DO (R) Assembly (PT/PT)	2-2	6.83. Frontal Viewing Chaperon	3-1
2-67. Removal of DO (R) Assembly (PT/PT)	2-2	6.84. Sideview Viewing Chaperon	3-1
2-68. Removal of DO (R) Assembly (PT/PT)	2-2	6.85. Frontal Viewing Chaperon	3-1
2-69. Removal of DO (R) Assembly (PT/PT)	2-2	6.86. Sideview Viewing Chaperon	3-1
2-70. Removal of DO (R) Assembly (PT/PT)	2-2	6.87. Frontal Viewing Chaperon	3-1
2-71. Removal of DO (R) Assembly (PT/PT)	2-2	6.88. Sideview Viewing Chaperon	3-1
2-72. Removal of DO (R) Assembly (PT/PT)	2-2	6.89. Frontal Viewing Chaperon	3-1
2-73. Removal of DO (R) Assembly (PT/PT)	2-2	6.90. Sideview Viewing Chaperon	3-1
2-74. Removal of DO (R) Assembly (PT/PT)	2-2	6.91. Frontal Viewing Chaperon	3-1
2-75. Removal of DO (R) Assembly (PT/PT)	2-2	6.92. Sideview Viewing Chaperon	3-1
2-76. Removal of DO (R) Assembly (PT/PT)	2-2	6.93. Frontal Viewing Chaperon	3-1
2-77. Removal of DO (R) Assembly (PT/PT)	2-2	6.94. Sideview Viewing Chaperon	3-1
2-78. Removal of DO (R) Assembly (PT/PT)	2-2	6.95. Frontal Viewing Chaperon	3-1
2-79. Removal of DO (R) Assembly (PT/PT)	2-2	6.96. Sideview Viewing Chaperon	3-1
2-80. Removal of DO (R) Assembly (PT/PT)	2-2	6.97. Frontal Viewing Chaperon	3-1
2-81. Removal of DO (R) Assembly (PT/PT)	2-2	6.98. Sideview Viewing Chaperon	3-1
2-82. Removal of DO (R) Assembly (PT/PT)	2-2	6.99. Frontal Viewing Chaperon	3-1
2-83. Removal of DO (R) Assembly (PT/PT)	2-2	6.100. Sideview Viewing Chaperon	3-1
2-84. Removal of DO (R) Assembly (PT/PT)	2-2	6.101. Frontal Viewing Chaperon	3-1
2-85. Removal of DO (R) Assembly (PT/PT)	2-2	6.102. Sideview Viewing Chaperon	3-1
2-86. Removal of DO (R) Assembly (PT/PT)	2-2	6.103. Frontal Viewing Chaperon	3-1
2-87. Removal of DO (R) Assembly (PT/PT)	2-2	6.104. Sideview Viewing Chaperon	3-1
2-88. Removal of DO (R) Assembly (PT/PT)	2-2	6.105. Frontal Viewing Chaperon	3-1
2-89. Removal of DO (R) Assembly (PT/PT)	2-2	6.106. Sideview Viewing Chaperon	3-1
2-90. Removal of DO (R) Assembly (PT/PT)	2-2	6.107. Frontal Viewing Chaperon	3-1
2-91. Removal of DO (R) Assembly (PT/PT)	2-2	6.108. Sideview Viewing Chaperon	3-1
2-92. Removal of DO (R) Assembly (PT/PT)	2-2	6.109. Frontal Viewing Chaperon	3-1
2-93. Removal of DO (R) Assembly (PT/PT)	2-2	6.110. Sideview Viewing Chaperon	3-1
2-94. Removal of DO (R) Assembly (PT/PT)	2-2	6.111. Frontal Viewing Chaperon	3-1
2-95. Removal of DO (R) Assembly (PT/PT)	2-2	6.112. Sideview Viewing Chaperon	3-1
2-96. Removal of DO (R) Assembly (PT/PT)	2-2	6.113. Frontal Viewing Chaperon	3-1
2-97. Removal of DO (R) Assembly (PT/PT)	2-2	6.114. Sideview Viewing Chaperon	3-1
2-98. Removal of DO (R) Assembly (PT/PT)	2-2	6.115. Frontal Viewing Chaperon	3-1
2-99. Removal of DO (R) Assembly (PT/PT)	2-2	6.116. Sideview Viewing Chaperon	3-1
2-100. Removal of DO (R) Assembly (PT/PT)	2-2	6.117. Frontal Viewing Chaperon	3-1
2-101. Removal of DO (R) Assembly (PT/PT)	2-2	6.118. Sideview Viewing Chaperon	3-1
2-102. Removal of DO (R) Assembly (PT/PT)	2-2	6.119. Frontal Viewing Chaperon	3-1
2-103. Removal of DO (R) Assembly (PT/PT)	2-2	6.120. Sideview Viewing Chaperon	3-1
2-104. Removal of DO (R) Assembly (PT/PT)	2-2	6.121. Frontal Viewing Chaperon	3-1
2-105. Removal of DO (R) Assembly (PT/PT)	2-2	6.122. Sideview Viewing Chaperon	3-1
2-106. Removal of DO (R) Assembly (PT/PT)	2-2	6.123. Frontal Viewing Chaperon	3-1
2-107. Removal of DO (R) Assembly (PT/PT)	2-2	6.124. Sideview Viewing Chaperon	3-1
2-108. Removal of DO (R) Assembly (PT/PT)	2-2	6.125. Frontal Viewing Chaperon	3-1
2-109. Removal of DO (R) Assembly (PT/PT)	2-2	6.126. Sideview Viewing Chaperon	3-1
2-110. Removal of DO (R) Assembly (PT/PT)	2-2	6.127. Frontal Viewing Chaperon	3-1
2-111. Removal of DO (R) Assembly (PT/PT)	2-2	6.128. Sideview Viewing Chaperon	3-1
2-112. Removal of DO (R) Assembly (PT/PT)	2-2	6.129. Frontal Viewing Chaperon	3-1
2-113. Removal of DO (R) Assembly (PT/PT)	2-2	6.130. Sideview Viewing Chaperon	3-1
2-114. Removal of DO (R) Assembly (PT/PT)	2-2	6.131. Frontal Viewing Chaperon	3-1
2-115. Removal of DO (R) Assembly (PT/PT)	2-2	6.132. Sideview Viewing Chaperon	3-1
2-116. Removal of DO (R) Assembly (PT/PT)	2-2	6.133. Frontal Viewing Chaperon	3-1
2-117. Removal of DO (R) Assembly (PT/PT)	2-2	6.134. Sideview Viewing Chaperon	3-1
2-118. Removal of DO (R) Assembly (PT/PT)	2-2	6.135. Frontal Viewing Chaperon	3-1
2-119. Removal of DO (R) Assembly (PT/PT)	2-2	6.136. Sideview Viewing Chaperon	3-1
2-120. Removal of DO (R) Assembly (PT/PT)	2-2	6.137. Frontal Viewing Chaperon	3-1
2-121. Removal of DO (R) Assembly (PT/PT)	2-2	6.138. Sideview Viewing Chaperon	3-1
2-122. Removal of DO (R) Assembly (PT/PT)	2-2	6.139. Frontal Viewing Chaperon	3-1
2-123. Removal of DO (R) Assembly (PT/PT)	2-2	6.140. Sideview Viewing Chaperon	3-1
2-124. Removal of DO (R) Assembly (PT/PT)	2-2	6.141. Frontal Viewing Chaperon	3-1
2-125. Removal of DO (R) Assembly (PT/PT)	2-2	6.142. Sideview Viewing Chaperon	3-1
2-126. Removal of DO (R) Assembly (PT/PT)	2-2	6.143. Frontal Viewing Chaperon	3-1
2-127. Removal of DO (R) Assembly (PT/PT)	2-2	6.144. Sideview Viewing Chaperon	3-1
2-128. Removal of DO (R) Assembly (PT/PT)	2-2	6.145. Frontal Viewing Chaperon	3-1
2-129. Removal of DO (R) Assembly (PT/PT)	2-2	6.146. Sideview Viewing Chaperon	3-1
2-130. Removal of DO (R) Assembly (PT/PT)	2-2	6.147. Frontal Viewing Chaperon	3-1
2-131. Removal of DO (R) Assembly (PT/PT)	2-2	6.148. Sideview Viewing Chaperon	3-1
2-132. Removal of DO (R) Assembly (PT/PT)	2-2	6.149. Frontal Viewing Chaperon	3-1
2-133. Removal of DO (R) Assembly (PT/PT)	2-2	6.150. Sideview Viewing Chaperon	3-1
2-134. Removal of DO (R) Assembly (PT/PT)	2-2	6.151. Frontal Viewing Chaperon	3-1
2-135. Removal of DO (R) Assembly (PT/PT)	2-2	6.152. Sideview Viewing Chaperon	3-1
2-136. Removal of DO (R) Assembly (PT/PT)	2-2	6.153. Frontal Viewing Chaperon	3-1
2-137. Removal of DO (R) Assembly (PT/PT)	2-2	6.154. Sideview Viewing Chaperon	3-1
2-138. Removal of DO (R) Assembly (PT/PT)	2-2	6.155. Frontal Viewing Chaperon	3-1
2-139. Removal of DO (R) Assembly (PT/PT)	2-2	6.156. Sideview Viewing Chaperon	3-1
2-140. Removal of DO (R) Assembly (PT/PT)	2-2	6.157. Frontal Viewing Chaperon	3-1
2-141. Removal of DO (R) Assembly (PT/PT)	2-2	6.158. Sideview Viewing Chaperon	3-1
2-142. Removal of DO (R) Assembly (PT/PT)	2-2	6.159. Frontal Viewing Chaperon	3-1
2-143. Removal of DO (R) Assembly (PT/PT)	2-2	6.160. Sideview Viewing Chaperon	3-1
2-144. Removal of DO (R) Assembly (PT/PT)	2-2	6.161. Frontal Viewing Chaperon	3-1
2-145. Removal of DO (R) Assembly (PT/PT)	2-2	6.162. Sideview Viewing Chaperon	3-1
2-146. Removal of DO (R) Assembly (PT/PT)	2-2	6.163. Frontal Viewing Chaperon	3-1
2-147. Removal of DO (R) Assembly (PT/PT)	2-2	6.164. Sideview Viewing Chaperon	3-1
2-148. Removal of DO (R) Assembly (PT/PT)	2-2	6.165. Frontal Viewing Chaperon	3-1
2-149. Removal of DO (R) Assembly (PT/PT)	2-2	6.166. Sideview Viewing Chaperon	3-1
2-150. Removal of DO (R) Assembly (PT/PT)	2-2	6.167. Frontal Viewing Chaperon	3-1
2-151. Removal of DO (R) Assembly (PT/PT)	2-2	6.168. Sideview Viewing Chaperon	3-1
2-152. Removal of DO (R) Assembly (PT/PT)	2-2	6.169. Frontal Viewing Chaperon	3-1
2-153. Removal of DO (R) Assembly (PT/PT)	2-2	6.170. Sideview Viewing Chaperon	3-1
2-154. Removal of DO (R) Assembly (PT/PT)	2-2	6.171. Frontal Viewing Chaperon	3-1
2-155. Removal of DO (R) Assembly (PT/PT)	2-2	6.172. Sideview Viewing Chaperon	3-1
2-156. Removal of DO (R) Assembly (PT/PT)	2-2	6.173. Frontal Viewing Chaperon	3-1
2-157. Removal of DO (R) Assembly (PT/PT)	2-2	6.174. Sideview Viewing Chaperon	3-1
2-158. Removal of DO (R) Assembly (PT/PT)	2-2	6.175. Frontal Viewing Chaperon	3-1
2-159. Removal of DO (R) Assembly (PT/PT)	2-2	6.176. Sideview Viewing Chaperon	3-1
2-160. Removal of DO (R) Assembly (PT/PT)	2-2	6.177. Frontal Viewing Chaperon	3-1
2-161. Removal of DO (R) Assembly (PT/PT)	2-2	6.178. Sideview Viewing Chaperon	3-1
2-162. Removal of DO (R) Assembly (PT/PT)	2-2	6.179. Frontal Viewing Chaperon	3-1
2-163. Removal of DO (R) Assembly (PT/PT)	2-2	6.180. Sideview Viewing Chaperon	3-1
2-164. Removal of DO (R) Assembly (PT/PT)	2-2	6.181. Frontal Viewing Chaperon	3-1
2-165. Removal of DO (R) Assembly (PT/PT)	2-2	6.182. Sideview Viewing Chaperon	3-1
2-166. Removal of DO (R) Assembly (PT/PT)	2-2	6.183. Frontal Viewing Chaperon	3-1
2-167. Removal of DO (R) Assembly (PT/PT)	2-2	6.184. Sideview Viewing Chaperon	3-1
2-168. Removal of DO (R) Assembly (PT/PT)	2-2	6.185. Frontal Viewing Chaperon	3-1
2-169. Removal of DO (R) Assembly (PT/PT)	2-2	6.186. Sideview Viewing Chaperon	3-1
2-170. Removal of DO (R) Assembly (PT/PT)	2-2	6.187. Frontal Viewing Chaperon	3-1
2-171. Removal of DO (R) Assembly (PT/PT)	2-2	6.188. Sideview Viewing Chaperon	3-1
2-172. Removal of DO (R) Assembly (PT/PT)	2-2	6.189. Frontal Viewing Chaperon	3-1
2-173. Removal of DO (R) Assembly (PT/PT)	2-2	6.190. Sideview Viewing Chaperon	3-1
2-174. Removal of DO (R) Assembly (PT/PT)	2-2	6.191. Frontal Viewing Chaperon	3-1
2-175. Removal of DO (R) Assembly (PT/PT)	2-2	6.192. Sideview Viewing Chaperon	3-1
2-176. Removal of DO (R) Assembly (PT/PT)	2-2	6.193. Frontal Viewing Chaperon	3-1
2-177. Removal of DO (R) Assembly (PT/PT)	2-2	6.194. Sideview Viewing Chaperon	3-1
2-178. Removal of DO (R) Assembly (PT/PT)	2-2	6.195. Frontal Viewing Chaperon	3-1
2-179. Removal of DO (R) Assembly (PT/PT)	2-2	6.196. Sideview Viewing Chaperon	3-1
2-180. Removal of DO (R) Assembly (PT/PT)	2-2	6.197. Frontal Viewing Chaperon	3-1
2-181. Removal of DO (R) Assembly (PT/PT)	2-2	6.198. Sideview Viewing Chaperon	3-1
2-182. Removal of DO (R) Assembly (PT/PT)	2-2	6.19	



<u>Section</u>	<u>Title</u>	<u>Page</u>	<u>Section</u>	<u>Title</u>	<u>Page</u>
6.	INTERFACES • IC PIN		1-3.	Electronic Viewfinder System Adjustments (CCD-TR42/TR72/TR82/TR400/TR430/ TR550/TR750) .....	7-21
6-1.	Camera Control Micro Processor Pin Function (VC Board IC602: SC424608 MC68HC11MA8FU) .....	6-1	1-3-1.	Horizontal Slant Adjustment .....	7-21
6-2.	Steady Shot Control Micro Processor Pin Function (VC Board IC777: CXP87132-010R) (CCD-TR82/TR400/TR550/TR750) .....	6-2	1-3-2.	Centering Adjustment .....	7-21
6-3.	Camera Core Pin Function (VC Board IC609: CXD2150R) (TR42/TR70/TR72/TR80/TR82/TR430) (VC Board IC609: CXD2150AR) (TR400/TR550/TR750) .....	6-3	1-3-3.	Focus Adjustment .....	7-22
6-4.	Mechanism Control Micro Processor Pin Function (VS Board IC505: CXP87132-009R) .....	6-5	1-3-4.	Aberration Adjustment .....	7-23
6-5.	Mode Control Micro Processor Pin Functions (VS Board IC503: MB89098PFV-G-107-BND) .....	6-6	1-3-5.	Horizontal Amplitude Adjustment (VF-65 board) .....	7-23
6-6.	Interface .....	6-8	1-3-6.	Vertical Amplitude Adjustment (VF-65 board) .....	7-24
6-6-1.	System Control – Video/Audio Block Interface (VS Board) .....	6-8	1-3-7.	Brightness Adjustments (VF-65 board) .....	7-24
6-6-2.	System Control – Servo Block Interface .....	6-8	1-3-8.	Horizontal Amplitude, Vertical Amplitude, Focus Check .....	7-24
7.	ADJUSTMENTS		1-4.	Color Electronic Viewfinder System Adjustments (CCD-TR70/TR80) .....	7-24
7-1.	CAMERA SECTION ADJUSTMENTS .....	7-1	1.	Current Consumption Adjustment (VF-66 board) .....	7-25
1-1.	Preparations before Adjustment (Camera Section) .....	7-1	2.	Power Supply Voltage Check (VF-67 board) .....	7-25
1-1-1.	List of Service Tools .....	7-1	3.	EVR Initial Data Input .....	7-25
1-1-2.	Preparations .....	7-2	4.	VCO Adjustment (VF-67 board) .....	7-26
1-1-3.	Precautions .....	7-4	5.	Bright Adjustment (VF-67 board) .....	7-26
1.	Switch settings .....	7-4	6.	Contrast Adjustment (VF-67 board) .....	7-27
2.	Adjusting Procedure .....	7-4	7.	SUB BRIGHT R Preset Adjustment (1) (VF-67 board) .....	7-27
3.	Subject .....	7-4	8.	SUB BRIGHT B Preset Adjustment (2) (VF-67 board) .....	7-28
1-1-4.	Adjusting Remote Commander .....	7-5	9.	White Balance Adjustment .....	7-28
1.	Using the adjusting remote commander .....	7-5	1-5.	Arrangement Diagram for Adjustment Parts .....	7-30
2.	Precautions upon using the adjusting remote commander .....	7-5	7-2.	MECHANICAL SECTION ADJUSTMENTS .....	7-35
1-1-5.	Page F Address List .....	7-6	2-1.	Operating without a Cassette .....	7-35
1-1-6.	Data Processing .....	7-9	2-2.	Tape Path Adjustment .....	7-36
1-2.	Camera System Adjustment .....	7-10	7-3.	VIDEO SECTION ADJUSTMENTS .....	7-37
1.	Power Supply Voltage Check (DD board) .....	7-10	3-1.	Preparations Before Adjustment .....	7-37
2.	Page F Data Initialization .....	7-10	3-1-1.	Equipments to be Used .....	7-37
3.	Page F Data Modification 1 .....	7-11	3-1-2.	Adjusting Precautions .....	7-37
4.	Page F Data Modification 2 (CCD-TR82/TR550) .....	7-12	3-1-3.	Connecting the Equipments .....	7-38
5.	Page E Data Write (CCD-TR42/TR70/TR72/TR80/TR430) .....	7-12	3-1-4.	How to Set the REC Mode in the Model with out REC switch .....	7-39
6.	28 MHz Original Oscillation Adjustment (VC board) .....	7-12	3-1-5.	Checking the Input Signals .....	7-40
7.	V SUB Adjustment .....	7-12	1.	CAMERA input .....	7-40
8.	VRG Adjustment .....	7-13	2.	VIDEO input .....	7-40
9.	Flange Back Adjustment .....	7-13	3-1-6.	Alignment Tape .....	7-41
10.	Flange Back Check .....	7-14	3-1-7.	Input/Output Level and Impedance .....	7-42
11.	HALL Adjustment .....	7-14	3-1-8.	Service Mode .....	7-43
12.	SYNC Level Check (VC board) .....	7-15	1.	Setting the service mode .....	7-43
13.	BURST Level Check (VC board) .....	7-15	2.	Page D write protect .....	7-45
14.	Picture Frame Setting .....	7-16	3.	Test mode setting .....	7-45
15.	Color Reproduction Adjustment .....	7-17	4.	Emergency code .....	7-45
16.	IRIS IN/OUT Adjustment (VC board) .....	7-18	5.	Emergency mode .....	7-46
17.	MAX GAIN Adjustment (VC board) .....	7-19	6.	Bit value discrimination .....	7-46
18.	Auto White Balance Standard Data Input .....	7-19	7.	Battery voltage check .....	7-47
19.	Auto White Balance Adjustment .....	7-20	8.	Mechanism controller input/output check .....	7-48
20.	White Balance Check .....	7-20	9.	Mode switch and CC DOWN switch check .....	7-49
21.	VIDEO OUT Level Check .....	7-21	10.	Tape top/end sensor check .....	7-50
			11.	Version of mechanical control microprocessor .....	7-50
			12.	Page D address list for standard 8 mm model (CCD-TR42/TR70/TR72/TR80/TR82/ TR430/TR550) .....	7-51
			13.	Page D address list for Hi8 model (CCD-TR400/TR750) .....	7-56
			3-2.	Power System Adjustments .....	7-61
			1.	Oscillator Frequency Check (DD board) .....	7-61
			2.	Power Voltage Check (DD board) .....	7-61

Section	Title	Page	Section	Title	Page
<b>6. INTERFACE - IO PIN</b>			<b>1-4. Electronic Waveform System Adjustments</b>		
<b>6-1. Camera/Control Micro Processor Pin Function</b>			<b>1-4-1. (CCD-TRM/THM/THM/THM) Timing</b>		7-20
(VCI Board Model: CCM0100-000001-000001)	7-1		1-4-1-1. Horizontal Shift Adjustment		7-21
<b>6-2. Slave Bus Control Micro Processor Pin Function</b>			1-4-1-2. Centering Adjustment		7-21
(VCI Board Model: CCM0100-000001-000001)	7-2		1-4-2. Focus Adjustment		7-22
<b>6-3. Camera Slave Pin Function</b>			1-4-3. Horizontal Adjustment		7-22
(VCI Board Model: CCM0100-000001-000001)	7-3		1-4-3-1. Horizontal Amplitude Adjustment (VFI-M board)		7-22
(Slave Slave Model: THM0100-000001-000001)	7-3		1-4-3-2. Vertical Amplitude Adjustment (VFI-M board)		7-24
(VCI Board Model: CCM0100-000001-000001)	7-3		1-4-3-3. Brightness Adjustment (VFI-M board)		7-24
(THM0100-000001-000001)	7-3		1-4-4. Horizontal Amplitude, Vertical Amplitude		7-24
<b>6-4. Master/Slave Control Micro Processor Pin Function</b>					
(VCI Board Model: CCM0100-000001-000001)	7-4		<b>1-4. Color Electronic Waveform System Adjustments</b>		7-24
<b>6-5. Slave Control Micro Processor Pin Function</b>			<b>1-4-1. (CCD-TRM/THM)</b>		7-24
(VCI Board Model: CCM0100-000001-000001)	7-5		1-4-1-1. Camera Geometry Adjustment (VFI-M board)		7-24
<b>6-6. Interface</b>		7-5	1-4-1-2. Power Supply Voltage Check (VFI-M board)		7-25
6-6-1. Master Control - Video/Color Slave Interface		7-5	1-4-1-3. VCI Initial Data Input		7-25
(VCI Board)		7-5	1-4-1-4. VCI Adjustment (VFI-M board)		7-25
6-6-2. Master Control - Slave Bus Interface		7-5	1-4-2. Bright Adjustment (VFI-M board)		7-25
			1-4-3. Camera Adjustment (VFI-M board)		7-27
<b>7. ADJUSTMENTS</b>			1-4-3-1. SUB SIGNAL R-Phase Adjustment (V)		7-27
<b>7-1. CAMERA SECTION ADJUSTMENTS</b>		7-1	1-4-3-2. SUB SIGNAL R-Phase Adjustment (B)		7-27
7-1-1. Preparation before Adjustment (Camera Section)		7-1	1-4-3-3. White Balance Adjustment		7-27
7-1-1-1. List of Service Tools		7-1			
7-1-1-2. Preparation		7-2	<b>1-4. Adjustments Chapter for Adjustment Parts</b>		7-27
7-1-1-3. Preparation		7-2			
1. White setting		7-2	<b>7-1. MICROWAVE SECTION ADJUSTMENTS</b>		7-28
2. Adjusting Precision		7-2	7-1-1. Operating without a Resistor		7-28
3. Subject		7-2	7-1-2. Tape Path Adjustment		7-28
7-1-1-4. Adjusting Remote Commander		7-2			
1. Using the adjusting remote commander		7-2	<b>7-2. VIDEO SECTION ADJUSTMENTS</b>		7-27
2. Procedures upon using the adjusting remote commander		7-2	7-2-1. Preparation before Adjustment		7-27
7-1-2. Page 7 Address List		7-2	7-2-1-1. Equipments in Use List		7-27
7-1-3. Data Processing		7-2	7-2-1-2. Adjusting Precision		7-27
<b>7-2. Camera System Adjustment</b>		7-2	7-2-1-3. Connecting the Equipments		7-28
1. Power Supply Voltage Check (CC board)		7-2	7-2-1-4. How to Set the REC Mode in the Model with REC mode		7-28
2. Page 7 Data Initialization		7-2	7-2-1-5. Checking the Input Signals		7-28
3. Page 7 Data Initialization 1		7-2	1. GAIN/PA Input		7-28
4. Page 7 Data Initialization 2 (VCI-TRM/THM)		7-2	2. VIDEO Input		7-28
5. Page 8 Data Write		7-2	3. Alignment Tape		7-28
(VCI Board/Slave/Slave/Slave/Slave)		7-2	4-1-5. Input/output (External) Impedance		7-28
6. M-Mode Original Oscillation Adjustment		7-2	4-1-6. Service Mode		7-28
(VCI board)		7-2	1. Setting the service mode		7-28
7. V SUB Adjustment		7-2	2. Page 7 data input		7-28
8. VHS Adjustment		7-2	3. Test mode setting		7-28
9. Page 8 Data Adjustment		7-2	4. Emergency mode		7-28
10. Page 8 Data Check		7-2	5. RF value check/setting		7-28
11. SALL Adjustment		7-2	7. Battery voltage check		7-27
12. VIDEO Level Check (VCI board)		7-2	8. Rectification capacitor input/output check		7-28
13. SUBST Level Check (VCI board)		7-2	9. Mode switch and COC/DOOR switch check		7-28
14. Picture Freeze/Still		7-2	10. Tape input/output check		7-28
15. Color Registration Adjustment		7-2	11. System of mechanical control adjustment		7-28
16. RGB SUBST Adjustment (VCI board)		7-2	12. Page 8 address list for standard unit model		7-28
17. SALL GAIN Adjustment (VCI board)		7-2	(CCD-TRM/THM/THM/THM/THM)		7-28
18. Auto White Balance (Standard) Data Input		7-2	(THM/THM)		7-28
19. Auto White Balance Adjustment		7-2	13. Page 9 address list for HLT model		7-28
20. White Balance Check		7-2	(CCD-TRM/THM)		7-28
21. VIDEO CUT Level Check		7-2	<b>7-3. Power System Adjustments</b>		7-27
			1. Oscillator Frequency Check (CC board)		7-27
			2. Power Voltage Check (CC board)		7-27

<u>Section</u>	<u>Title</u>	<u>Page</u>
3-3.	System Control System Adjustments .....	7-61
1.	Page D Initial Value Input .....	7-61
2.	Battery End Adjustment .....	7-62
3.	Battery Down Check .....	7-63
3-4.	Servo System Adjustments .....	7-63
1.	Switching Position Adjustment (VS board) .....	7-63
3-5.	Standard 8 mm Video System Adjustments (CCD-TR42/TR70/TR72/TR80/TR82/TR430/TR550) ....	7-64
1.	Playback Frequency Characteristic Adjustment (VS board) .....	7-64
2.	Flying Erase Check (VS board) .....	7-65
3.	VXO Oscillation Frequency Check (VS board) .....	7-65
4.	SYNC AGC Level Adjustment (VS board) .....	7-65
5.	Comb Filter Adjustment (VS board) .....	7-66
6.	Emphasis Input Level Adjustment (VS board) .....	7-67
7.	WHITE CLIP check (VS board) .....	7-67
8.	DARK CLIP check (VS board) .....	7-68
9.	DE EMPH Level Adjustment (VS board) .....	7-68
10.	PB Y OUT Level Adjustment .....	7-69
11.	Y FM Carrier Frequency Adjustment (VS board) .....	7-69
12.	Y FM Deviation Adjustment (VS board) .....	7-70
13.	Chroma Emphasis Adjustment 1 (VS board) .....	7-70
14.	Chroma Emphasis Adjustment 2 (VS board) .....	7-71
15.	Comb Filter Fine Adjustment (VS board) .....	7-71
16.	REC Y Level Adjustment (VS board) .....	7-72
17.	REC L Adjustment (VS board) .....	7-72
18.	REC CHROMA Level Adjustment (VS board) .....	7-73
19.	REC ATF Level Check (VS board) .....	7-74
3-6.	Hi8 Video System Adjustments (CCD-TR400/TR750) ....	7-74
1.	Playback Frequency Characteristic Adjustment (VS board) .....	7-75
2.	Flying Erase Check (VS board) .....	7-76
3.	VXO Oscillation Frequency Check (VS board) .....	7-76
4.	SYNC AGC Level Adjustment (VS board) .....	7-76
5.	Comb Filter Adjustment (VS board) .....	7-77
6.	Emphasis Input Level Adjustment (VS board) .....	7-78
7.	WHITE CLIP check (VS board) .....	7-78
8.	DARK CLIP check (VS board) .....	7-79
9.	DE EMPH Level Adjustment (VS board) .....	7-79
10.	PB Y OUT Level Adjustment (VS board) .....	7-80
11.	Normal Mode Y FM Carrier Frequency Adjustment (VS board) .....	7-80
12.	Normal Mode Y FM Deviation Adjustment (VS board) .....	7-81
13.	Hi8 Mode Y FM Carrier Frequency Adjustment (VS board) .....	7-81
14.	Hi8 Mode Y FM Deviation Adjustment (VS board) .....	7-82
15.	Chroma Emphasis Adjustment 1 (VS board) .....	7-82
16.	Chroma Emphasis Adjustment 2 (VS board) .....	7-83
17.	Comb Filter Fine Adjustment (VS board) .....	7-83
18.	REC Y Level Adjustment (VS board) .....	7-84
19.	REC L Adjustment (VS board) .....	7-85
20.	REC CHROMA Level Adjustment (VS board) .....	7-86
21.	REC ATF Level Check (VS board) .....	7-87

<u>Section</u>	<u>Title</u>	<u>Page</u>
3-7.	Monaural Audio System Adjustment (CCD-TR42/TR70/TR82/TR550) .....	7-87
1.	E-E Output Level Check (AU-169 board) .....	7-88
2.	Deviation Adjustment .....	7-88
3.	Overall Level Characteristic, Distortion Check .....	7-88
4.	Overall Noise Level Check .....	7-88
3-8.	Stereo Audio System Adjustment (CCD-TR72/TR80/TR400/TR430/TR750) .....	7-89
1.	E-E Output Level Check (AU-165 board) .....	7-89
2.	Matrix L-R Adjustment (AU-165 board) .....	7-89
3.	REC Matrix L+R Check (AU-165 board) .....	7-90
4.	1.5 MHz Deviation Adjustment .....	7-90
5.	1.7 MHz Deviation Adjustment .....	7-90
6.	Overall Level Characteristics, Distortion Check .....	7-91
7.	Separation Check .....	7-91
8.	Overall Noise Level Check .....	7-91
3-9.	Arrangement Diagram for Adjustment Parts .....	7-92

There is the color reproduction standard frame at the back of the book.

Section	Title	Page	Section	Title	Page
0-0	System General System Adjustments	7-01	0-5	Measured Audio System Adjustment	7-07
1	Page/2 sides Video Input	7-01		(DOLBY/PROLOG/STEREO/VIDEO)	7-07
2	Battery Test Adjustment	7-02	1	0-5 Output Level Check (A/B - 80% level)	7-08
3	Battery Over Check	7-02	2	Isolation Adjustment	7-08
0-4	Basic System Adjustments	7-03	3	Overall Level Characteristics, Detection Check	7-09
1	Isolating Position Adjustment (70% level)	7-03	4	Overall Noise Level Check	7-09
0-6	Standard 8 mm Video System Adjustments		0-6	Video Audio System Adjustment	
	(DOLBY/PROLOG/STEREO/VIDEO/VIDEO/VIDEO)	7-04		(DOLBY/PROLOG/STEREO/VIDEO/VIDEO)	7-09
1	Playback Frequency Characteristics Adjustment (70% level)	7-04	1	0-5 Output Level Check (A/B - 80% level)	7-09
2	Play Rate Check (70% level)	7-04	2	Isolate L/R Adjustment (50% - 80% level)	7-09
3	VCO Oscillator Frequency Check (70% level)	7-05	3	Isolate L/R Check (A/B - 80% level)	7-09
4	0.75% AGC Level Adjustment (70% level)	7-05	4	1.2 kHz Isolation Adjustment	7-09
5	Color Filter Adjustment (70% level)	7-05	5	1.1 kHz Isolation Adjustment	7-09
6	Playback Input Level Adjustment (70% level)	7-05	6	Overall Level Characteristics, Detection Check	7-07
7	0.001% CLIP Check (70% level)	7-07	7	Separation Check	7-07
8	0.001% CLIP Check (70% level)	7-08	8	Overall Noise Level Check	7-07
9	0.001% CLIP Check (70% level)	7-08	0-8	Assignment Diagram for Adjustment Parts	7-08
10	0.001% CLIP Check (70% level)	7-08			
11	0.001% CLIP Check (70% level)	7-08			
12	1.7% Center Frequency Adjustment (70% level)	7-09			
13	1.7% Isolation Adjustment (70% level)	7-09			
14	0.001% Isolation Adjustment 1 (70% level)	7-09			
15	0.001% Isolation Adjustment 2 (70% level)	7-09			
16	Color Filter P/A Adjustment (70% level)	7-09			
17	0.001% L Level Adjustment (70% level)	7-09			
18	0.001% L Level Adjustment (70% level)	7-09			
19	0.001% L Level Adjustment (70% level)	7-09			
20	0.001% L Level Adjustment (70% level)	7-09			
0-8	8 mm Video System Adjustments (DOLBY/PROLOG/STEREO/VIDEO)	7-09			
1	Playback Frequency Characteristics Adjustment (70% level)	7-09			
2	Play Rate Check (70% level)	7-09			
3	VCO Oscillator Frequency Check (70% level)	7-09			
4	0.75% AGC Level Adjustment (70% level)	7-09			
5	Color Filter Adjustment (70% level)	7-09			
6	Playback Input Level Adjustment (70% level)	7-09			
7	0.001% CLIP Check (70% level)	7-09			
8	0.001% CLIP Check (70% level)	7-09			
9	0.001% CLIP Check (70% level)	7-09			
10	0.001% CLIP Check (70% level)	7-09			
11	0.001% CLIP Check (70% level)	7-09			
12	1.7% Center Frequency Adjustment (70% level)	7-09			
13	1.7% Isolation Adjustment (70% level)	7-09			
14	0.001% Isolation Adjustment 1 (70% level)	7-09			
15	0.001% Isolation Adjustment 2 (70% level)	7-09			
16	Color Filter P/A Adjustment (70% level)	7-09			
17	0.001% L Level Adjustment (70% level)	7-09			
18	0.001% L Level Adjustment (70% level)	7-09			
19	0.001% L Level Adjustment (70% level)	7-09			
20	0.001% L Level Adjustment (70% level)	7-09			
21	0.001% L Level Adjustment (70% level)	7-09			

There is the video reproduction standard items at the back of the book.

## SERVICE NOTE

### [SEMICONDUCTOR FOR CORRECTION LIST DISPLAY]

Part code and part name of the semiconductor for correction of the print board is described in the space of each print figure. Use this list when ordering parts.

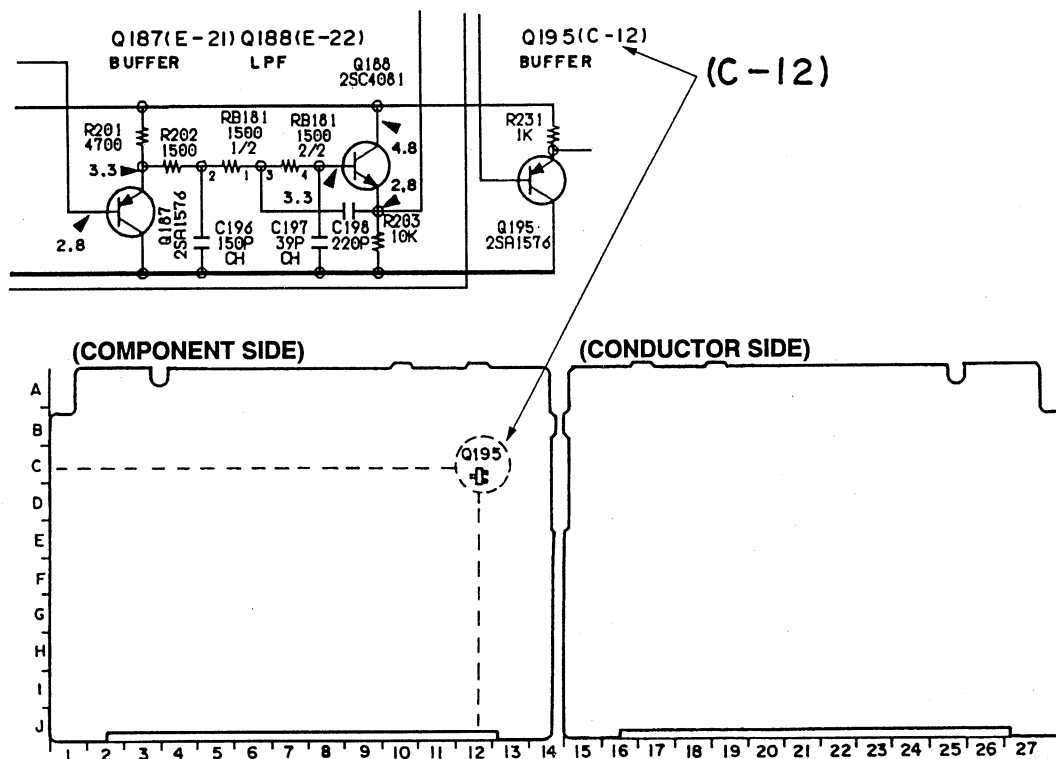
### [PARTS LOCATION DIAGRAM RELATED TO POWER SUPPLY]

The parts location diagram for the power supply which are often checked and replaced when repairing the fuse and IC link and so on. (See page 4-24, 4-35, 4-36 and 4-78.)

This diagram is useful for repair.

### [SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red in schematic diagrams. This enables to find the location on the board easily when servicing.



### [HEAD CLEANING]

After an extended period of use the video image may become indistinct or may not appear at all during playback of a tape. The cause of this usually are dirty video heads. For remedy, cleaning of the heads is required.

#### Check for Head Clogs During Recording

- ① Use a blank tape, record a short section, then press the stop button to stop.
- ② Set to recording mode again.
- ③ If the [ ✕ ] mark is flashing in the viewfinder at this time, head clogs are occurred.

#### Check During Playback of a Tape

- ① Play back a pre-recorded tape and display the image on a TV screen.
- ② If there is no sound and the image is unstable, no image appears on the screen, or tape transport is unstable, head clogs are occurred.

#### Remedy

##### [Cleaning method using a cleaning tape]

- Use the Cleaning Tape. (Please follow the instructions attached to the cleaning tape.)

**REVIEW WITH**

CONDUCTOR	PER	COMPLETION	LIST
1990-1991			

For each and just one of the combinations for connection of the point level is described in the space of each point figure. Use this list without further remarks.

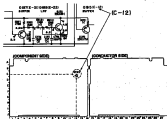
PLANT LOCATION	PROGRAM	RELATION TO
BRIDGE PLANT		

The parts location diagram for the power supply which are also checked and replaced when repairing the fan and IC Ball and on the other pages 4-34, 4-35, 4-36 and 4-37.)

1. *Journal of the American Medical Association*, 1997; 277: 1039-1043.

**Abstract**

In this section manual, the reported location of the contamination (IC, location, date) are indicated in red in automatic diagnosis. This enables to find the location of the level with contamination.



1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

After an extended period of use the video image may become indistinct or may not appear at all during playback of a tape. The cause of this usually can be traced back. For example, shooting of the back is needed.

Abstracts for Special Issues: Reviews

- Use a **Multi-Step**, record a short section, then press the **stop** button to stop.
- Go to recording mode again.
- If the **[STOP]** mark is flashing in the viewfinder at this time, hand stops are reserved.

**Abstract**

- ❖ Play back is pre-rendered tape and display the image on a TV screen.
- ❖ If there is no sound and the image is unstable, no image appears on the screen, or image movement is unstable, head clings are removed.

100

11. *Journal of the American Medical Association*, 2000; 283: 2686-2692.

- **Use the Cleaning Tips.** (Place below the instructions attached to the cleaning tips.)

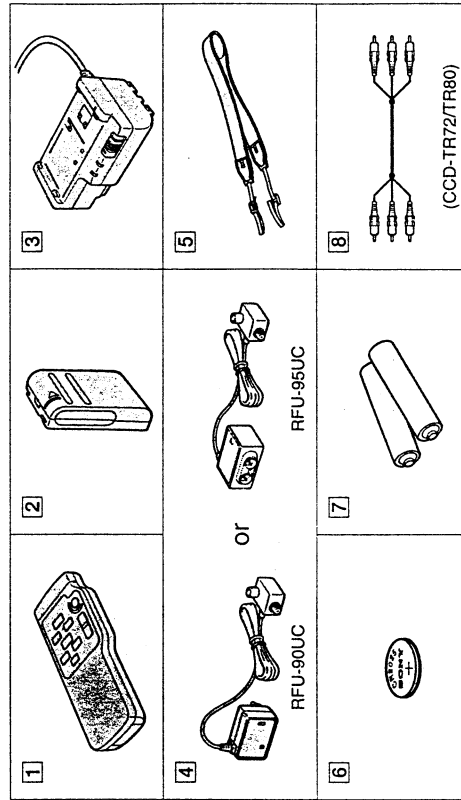
## SECTION 1 GENERAL

This section is extracted from CCD-TR42/TR70/TR72/TR80/TR82 instruction manual.

5

### Checking Supplied Accessories

Check that the following accessories are supplied with your camcorder.



- 1 Wireless remote commander (1) (p.17, 48)
- 2 NP-55 Battery pack (1) (p.6, 33)
- 3 AC-V25/V25A/V25B AC power adaptor (1) (p.6, 19)
- 4 RFU-90UC/95UC RFU adaptor (1) (p.16)
- 5 Shoulder strap (1) (p.46)
- 6 CR2025 Lithium Battery (1) (p.30)  
Already installed in the camcorder.
- 7 Size AA (R16) Battery for Remote Commander (2) (p.48)
- 8 A/V connecting cable (1) (p.16)  
For CCD-TR72/TR80 only

### Before You Begin Checking Your Model Number

The instructions in this manual are for five models listed below. Before you start reading and operating, check your model number by looking at the bottom of your camcorder. The CCD-TR42 is the model used for illustration purposes. Otherwise, the model name is indicated in the illustrations. Any differences in operation are clearly indicated in the text, for example, "CCD-TR82". As you read through this manual, buttons and settings on the camcorder are shown in capital letters, e.g. Set the POWER switch to CAMERA.

#### Types of Differences

Model Number	Audio		Viewfinder		Steady Shot	Zoom (X)
	Monaural	Stereo	B/W	Color		
CCD-TR42	○		○			12
CCD-TR70	○			○		10
CCD-TR72		○	○			12
CCD-TR80		○		○		12
CCD-TR82	○		○		○	12

#### Note on TV Color Systems

TV color systems differ from country to country. To view your recordings on a TV, you need an NTSC/PAL-M transcoder (as this is an NTSC system based camcorder). Please check the list on page 39 to see the TV color system of your country.

#### Note on the Supplied RFU adaptor

You can use the supplied RFU adaptor only in the country where you bought this camcorder. Since each country has its own electricity and TV color system, you may not be able to use the RFU adaptor when you use the camcorder abroad.

#### Precaution on Copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

#### Precautions on Camcorder Care

- Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction and sometimes the malfunction cannot be repaired. [a]
- Do not let the camcorder get wet. Keep the camcorder from rain or sea water. It may cause a malfunction and sometimes the malfunction cannot be repaired. [b]
- Never leave the camcorder under temperatures above 140°F (60°C), such as in a car parked in the sun or under direct sunlight. [c]



4





## Getting Started

# Charging and Installing the Battery Pack

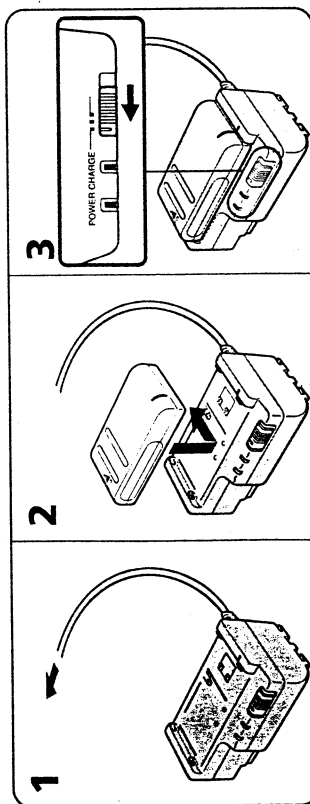
Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC-V25/V25A/V25B AC power adaptor.

## Charging the Battery Pack

Charge the battery pack on a flat place without vibration.

(1) Connect the AC power adaptor to a wall outlet. (2) Align the right side of the battery pack with the line on the AC power adaptor, then slide the battery pack in the direction of the arrow. (3) Set the selector to CHARGE. The POWER lamp (green) and the CHARGE lamp (orange) light up. Charging begins.

When charging is completed, the CHARGE lamp goes out. Set the selector to the center position and unplug the unit from the wall outlet. Then remove the battery pack and install it on the camcorder. To stop charging, set the selector to the center position.



## Charging Time

Battery pack	NP-55 (supplied)	NP-80 NP-80D	NP-77H	NP-66H	NP-60D	NP-55H
Charging time*	70	180	160	120	90	80

\* Approximate minutes to charge an empty pack using the AC-V25/V25A/V25B (Lower temperatures require a longer charging time.)

## Battery Life

### CCD-TR42/TR72

Battery Pack	NP-55	NP-80/80D	NP-77H	NP-66H	NP-60D	NP-55H
Typical recording time**	35	95	85	65	45	40
Continuous recording time***	65	180	160	120	85	75

### CCD-TR70/TR80

Battery pack	NP-55	NP-80/80D	NP-77H	NP-66H	NP-60D	NP-55H
Typical recording time**	30	90	80	60	40	35
Continuous recording time***	60	170	150	110	80	70

## Charging and Installing the Battery Pack

### CCD-TR82

Battery pack	NP-55	NP-80/80D	NP-77H	NP-66H	NP-60D	NP-55H
Typical recording time**	30	85	75	55	40	35
Continuous recording time***	55	165	145	105	75	65

\*\* Approximate minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

\*\*\* Approximate continuous recording time indoors.

## Important!

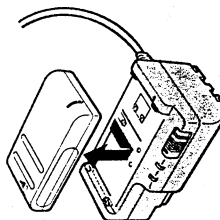
Use the battery completely before re-charging!

Before you recharge the battery, make sure the battery has been used up (discharged) completely. Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.

To use up the battery, remove the cassette and slide the POWER switch to CAMERA with the battery attached, and leave the camcorder until the  $\square$  indicator and the red lamp flash rapidly in the viewfinder.

## Removing the Battery Pack

Slide the battery pack in the direction of the arrow.



## Notes on charging the battery pack

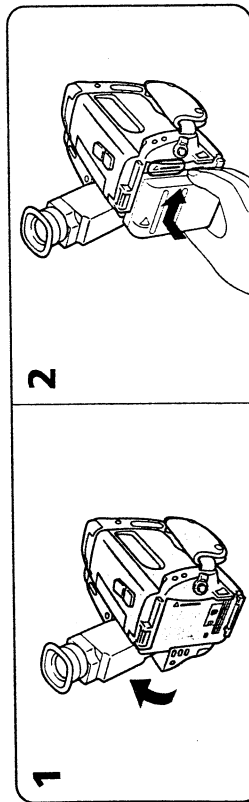
- The POWER lamp will remain lit for a while even if the battery pack is removed and the power cord is unplugged after charging the battery pack. This is normal.
- If the POWER lamp does not light, set the selector to the center position and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to CHARGE again.
- You cannot operate the camcorder using the AC power adaptor while charging the battery pack.



## Charging and Installing the Battery Pack

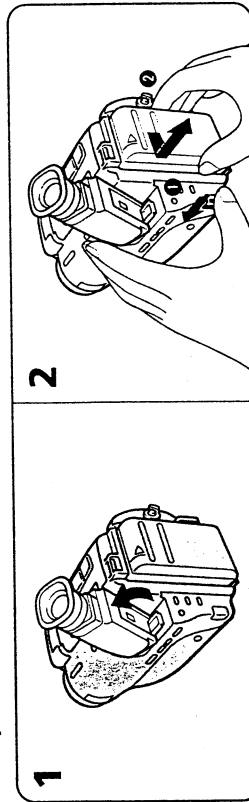
### Installing the Battery Pack

(1) Lift up the viewfinder. (2) Align the right side of the battery pack with the white line on the camcorder, and slide the battery pack to the right.



### Removing the Battery Pack

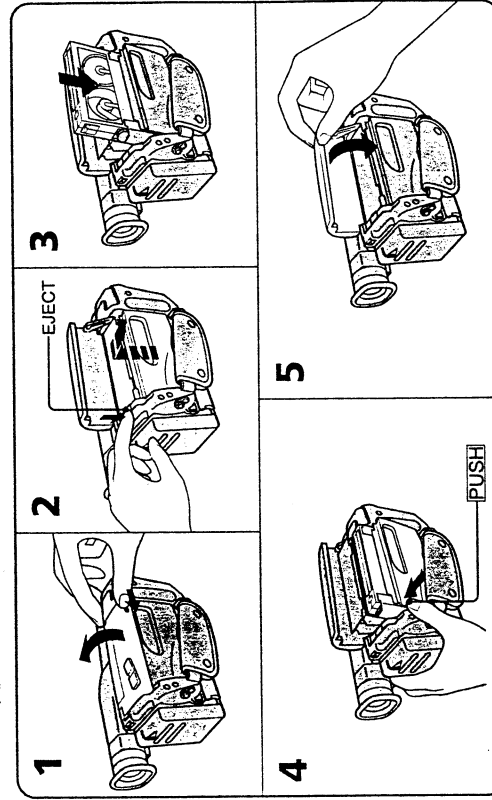
(1) Lift up the viewfinder. (2) While pressing BATT, slide the battery pack to the left.



## Inserting a Cassette

Make sure that a power source is installed.

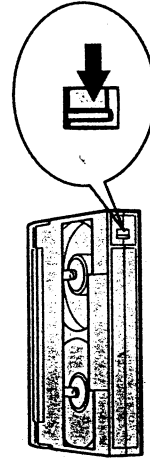
(1) While sliding the lid lock, lift up the lid. Then open it. (2) Press EJECT. The cassette compartment automatically lifts up and opens. (3) Insert a cassette (not supplied) with the window facing out. (4) Press the PUSH mark on the cassette compartment to close it. The cassette compartment automatically goes down. (5) Close the lid until it locks.



**To Eject the Cassette**  
Press EJECT.

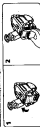
### To Prevent Accidental Erasure

Slide the tab on the cassette to expose the red mark. If you try to record with the red mark exposed, the and indicators flash in the viewfinder, and you cannot record on the tape. To re-record on this tape, slide the tab back out to cover the red mark.

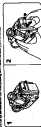


Always wear headlamps when in a dark place.

**Inserting the Battery Pack** **CAUTION**  
 Do not touch the battery pack terminals. Do not touch the battery pack with the ends of the wire. Do not touch the battery pack with the ends of the wire. Do not touch the battery pack with the ends of the wire.



**Inserting the Battery Pack**  
 Do not touch the battery pack terminals. Do not touch the battery pack with the ends of the wire. Do not touch the battery pack with the ends of the wire.



**Inserting a Cassette**

Do not touch the cassette terminals. Do not touch the cassette with the ends of the wire. Do not touch the cassette with the ends of the wire. Do not touch the cassette with the ends of the wire.



**Do Not Use Headlamps**

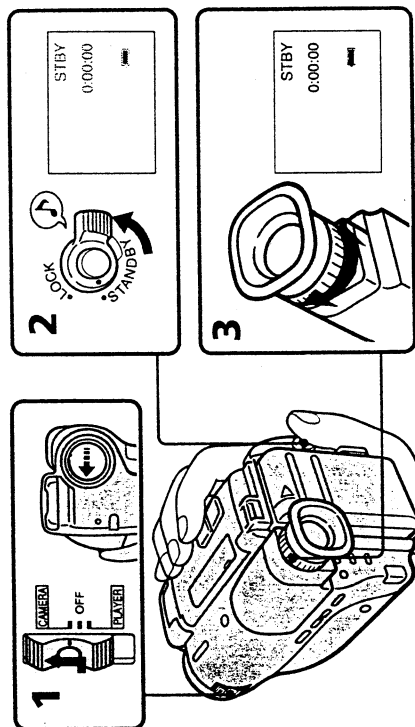
Do not use the headlamps in a dark place. Do not use the headlamps in a dark place. Do not use the headlamps in a dark place. Do not use the headlamps in a dark place. Do not use the headlamps in a dark place.



## Adjusting the Viewfinder Lens

Before you use the camcorder for the first time or after someone else has used it, focus the viewfinder lens. Make sure that the power source is connected to the camcorder.

(1) While pressing the small green button on the POWER switch, slide it to CAMERA. (2) Turn STANDBY up. (3) Turn the viewfinder lens adjustment ring so that the indicators in the viewfinder come into sharp focus.

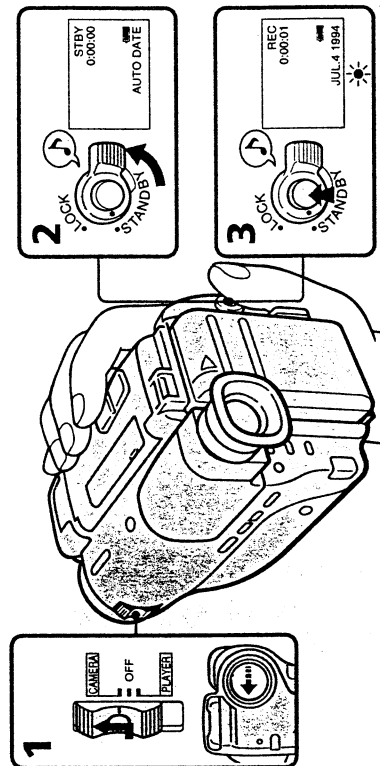


## Basic Operations

### Camera Recording

Make sure that a power source and a cassette is inserted. The date is automatically recorded for 10 seconds after you start recording (AUTO DATE feature). This feature works only once a day. You can hear the beep sound to confirm your operation. Before you record one-time events, you may want to make a trial recording to make sure that you are using the camcorder correctly.

(1) While pressing the small green button on the POWER switch, slide it to CAMERA. (2) Turn STANDBY up. (3) Press START/STOP. The camcorder starts recording and the "REC" indicator appears in the viewfinder.



#### Note on beep sound

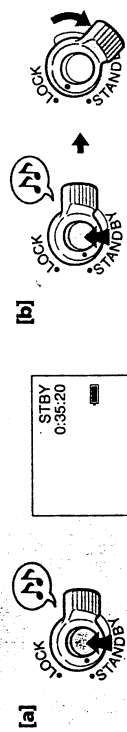
As indicated with ♪ in the illustrations, a beep sounds when you turn the power on or when you start recording and two beeps sound when you stop recording, confirming the operation. Several beeps also sound as a warning of any unusual condition of the camcorder (p.51). Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, select "OFF" in the menu system (p.25).

#### To Stop Recording Momentarily [a]

Press START/STOP again. The "STBY" indicator appears in the viewfinder (Standby mode).

#### To Finish Recording [b]

Press START/STOP. Turn STANDBY down, and set the POWER switch to OFF. Then, eject the cassette (p.9).



1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

There are no differences in the frequency of the *hsp70* gene between the control and treated groups. The *hsp70* gene is expressed in the control group, but the expression is significantly higher in the treated group. The *hsp70* gene is expressed in the control group, but the expression is significantly higher in the treated group. The *hsp70* gene is expressed in the control group, but the expression is significantly higher in the treated group.



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[illegible]

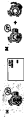
...the ...

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## Camera Recording

### Note on Standby mode

If you leave the camcorder for 5 minutes or more with a cassette inserted in Standby mode, the camcorder goes off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, turn **STANDBY** down once and turn it up again. To start recording, press **START/STOP**.

### Note on recording

When you record from the beginning of the tape, run the tape for about 15 seconds before actual recording. This prevents the camcorder from missing any start-up scenes when you play back the tape. You can record tapes in **SP** (standard play) mode only.

### Note on the tape counter

The tape counter indicates the recording or playback time. Use it as a guide. There will be a time lag of several seconds from the actual time. To set the counter to zero, press **COUNTER RESET** located below the viewfinder. You can know the approximate remaining tape by the remaining tape indicator (p.50).

### Note on the AUTO DATE feature

The clock is set to the East Coast Standard Time at the factory. You can reset the clock (p.31).

You can change the **AUTO DATE** setting by selecting **ON** or **OFF** in the menu system (p.25).

- The **AUTO DATE** feature works once a day. However, the date may automatically appear more than once a day when:
  - you reset the date and time.
  - you eject and insert the tape again.
  - you stop recording within 10 seconds.
- Once the **AUTO DATE** feature turns off the date display 10 seconds after the start of recording, the date and time are displayed as follows:
  - if the date display setting has been made, the date is displayed.
  - if the time display setting has been made, the time is displayed.
  - if neither display setting has been made, nothing is displayed.

### When moving from indoors to outdoors (or vice versa)

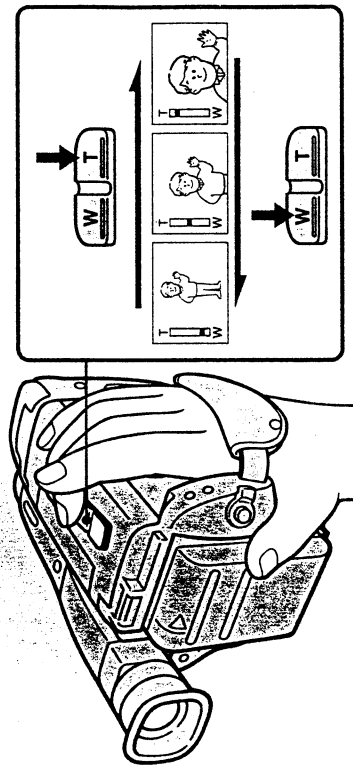
Turn **STANDBY** up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

## Using the Zoom Feature

Zooming is a recording technique that lets you change the size of the subject in the scene. For more professional-looking recordings, use the zoom sparingly.

T side: for telephoto (subject appears closer)

W side: for wide-angle (subject appears farther away)



### Zooming Speed

Press the power zoom button firmly for a high-speed zoom. Press it softly for a relatively slow zoom.

### When you shoot a subject using a telephoto zoom

If you cannot get a sharp focus while in extreme telephoto zoom, press the W side of the power zoom button until the focus is sharp.

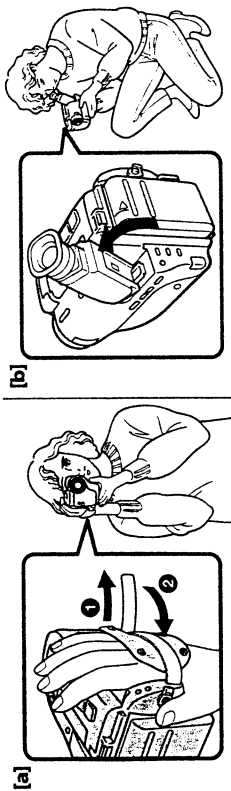
You can shoot a subject that is at least 3.3 feet (about 1 m) away from the lens surface in the telephoto position, or 1/2 inches (about 1cm) in the wide-angle position.





## Hints for Better Shooting

For hand-held shots, you'll get better results holding the camcorder according to the following suggestions:



- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb. **[a]**
- Place your right elbow against your side.
- Place your left hand under the camcorder to support it.
- Place your eye firmly against the viewfinder eyecup.
- Use the viewfinder frame as a guide to determine the horizontal plane.
- You can also record in a low position to get an interesting recording angle. Turn the viewfinder up for recording from a low position. **[b]**

### Place the camcorder on a flat surface or use a tripod.

Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder (p.46). Make sure the tripod screw is shorter than 9/32 in (6.5mm).

### To Use the Viewfinder as a Sports Finder **[c]**

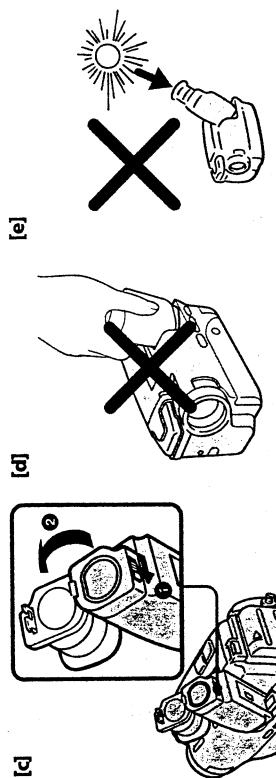
With the sports finder, you can monitor the picture while your eye is at a distance from the eyecup. The sports finder is convenient when moving around to shoot scenes. While sliding the viewfinder release knob to the left, flip open the viewfinder.

### Note on the color viewfinder (for CCD-TR70/TR80)

You may find it difficult to use the color viewfinder as the sports finder for recording in light location.

### Cautions on the viewfinder

- Do not pick up the camcorder by the viewfinder. **[d]**
- Do not place the camcorder so as to point the viewfinder toward the sun. The inside of the viewfinder may be deformed. Be careful in placing the camcorder under sunlight or at the window. **[e]**



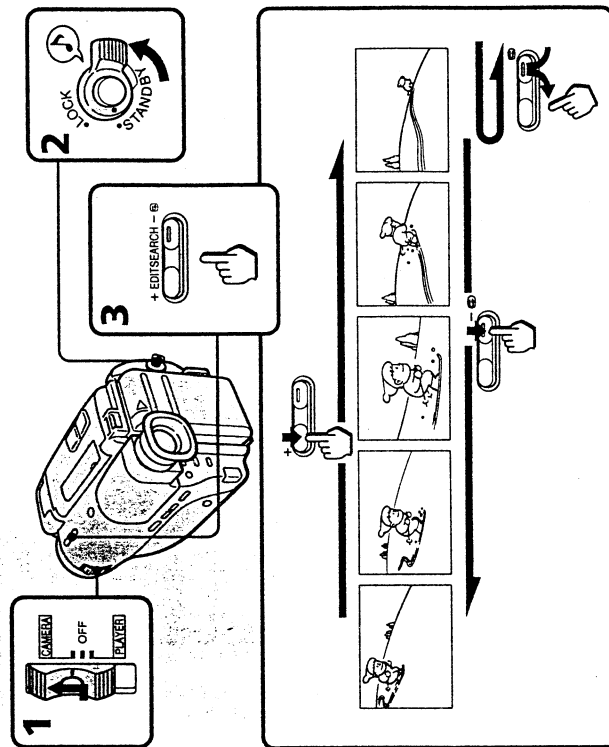
## Checking the Recorded Picture

Using EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder.

- (1) While pressing the small green button on the POWER switch, slide it to CAMERA.
- (2) Turn STANDBY up. (3) Press EDITSEARCH. Press the - (REW) side momentarily, the last few seconds of the recorded portion plays back (Rec Review).

Keep pressing EDITSEARCH to play back the last recorded portion (Edit Search).

+ side: to view the forward playback picture  
- side: to view the reverse playback picture



Hints for Better Shooting/Checking the Recorded Picture

### To Stop Playback

Release EDITSEARCH.

### To Begin Re-recording

Press START/STOP. Re-recording begins from the point you released EDITSEARCH. Provided you do not eject the tape, the transition between the last scene you recorded and the next scene you record will be smooth.

### Monitoring the Sound While Viewing the Playback Picture in the Viewfinder

Connect earphone/headphones (not supplied) to the @/⌂ jack. Play back the tape in PLAYER mode (p.17).

## Hints for Better Shooting

Be sure that your gun is not cocked when cocking the hammer or trigger.



Hold the hammer back with the thumb and/or the index finger.

- Do not cock the hammer with the index finger.
- Do not cock the hammer with the thumb.
- Do not cock the hammer with the thumb and index finger.
- Do not cock the hammer with the thumb and index finger.

When the hammer is cocked, the trigger is cocked.

When the hammer is cocked, the trigger is cocked.

When the hammer is cocked, the trigger is cocked.

When the hammer is cocked, the trigger is cocked.

When the hammer is cocked, the trigger is cocked.



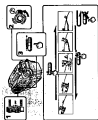
## Checking the Recoiled Position

When the hammer is cocked, the trigger is cocked.

When the hammer is cocked, the trigger is cocked.

When the hammer is cocked, the trigger is cocked.

When the hammer is cocked, the trigger is cocked.



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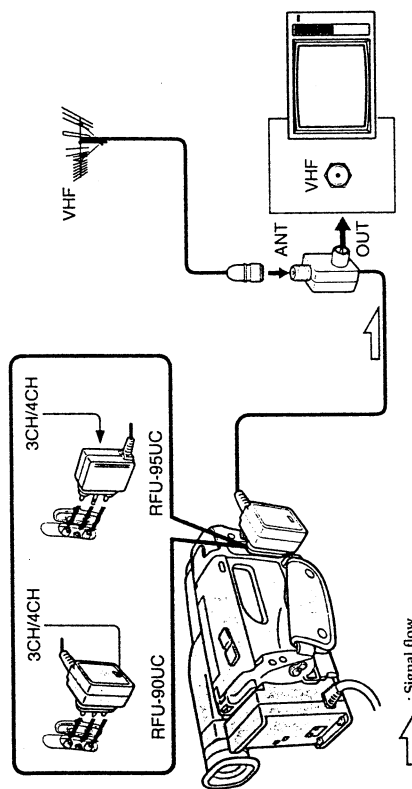
When the hammer is cocked, the trigger is cocked.

## Connections for Playback

You can use this camcorder as a VCR by connecting it to your TV for playback. There are some ways to connect your camcorder as shown below. It is recommended to use the house current as the power source (p.19).

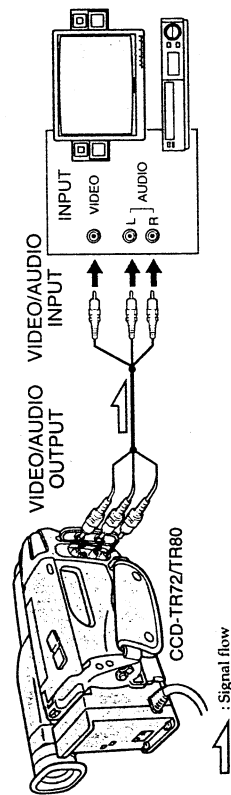
### Connecting to a TV without Video/Audio Input Jacks

Connect the camcorder to the TV using the supplied RFU adaptor. Set the channel selector on the RFU adaptor and your TV channel to VHF channel CH3 or CH4, whichever is not active in your area. With this connection, the sound is monaural.



### Connecting to a TV with Video/Audio Input Jacks or VCR

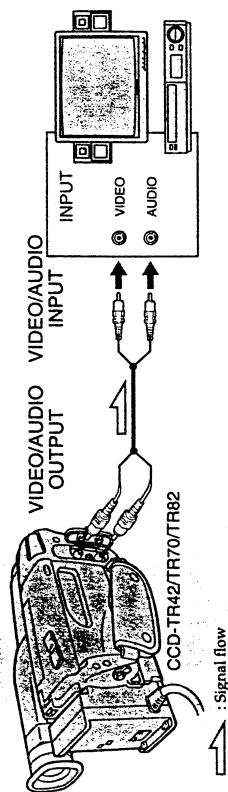
**For Stereo Models (CCD-TR72/TR80)**  
Connect the camcorder to your TV by using the supplied connecting cable. Set the TV/VCR selector to VCR on the TV. When connecting the camcorder to VCR, set the input selector on the VCR to LINE.



If your TV or VCR is monaural type, connect only the white plug for audio on both the camcorder and the TV or the VCR. With this connection, the sound is monaural.

### For Monaural Models (CCD-TR42/TR70/TR82)

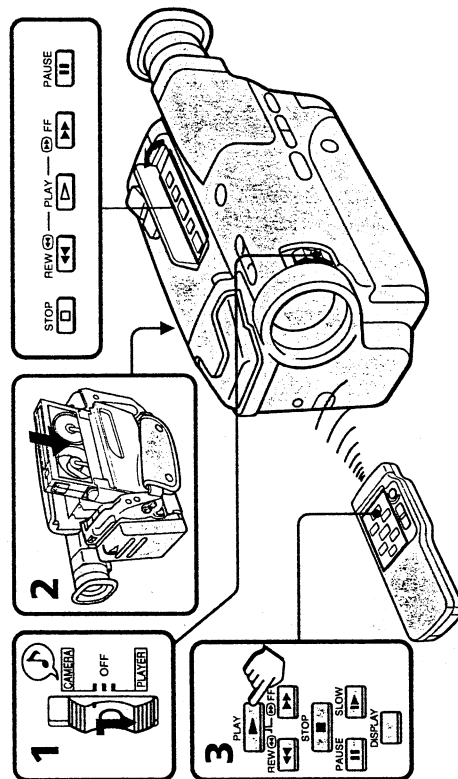
Connect the camcorder to your TV by using a monaural A/V connecting cable (not supplied). Set the TV/VCR selector to VCR on the TV. When connecting the camcorder to VCR, set the input selector on the VCR to LINE.



## Playing Back a Tape

You can monitor the playback picture in the viewfinder. You can also monitor on the TV screen, after connecting the camcorder to the TV/VCR (p.16). You can control playback using the supplied Remote Commander (p.49).

(1) While pressing the small green button on the POWER switch, slide it to PLAYER. (2) Insert the recorded tape with the window facing out. (3) Press  $\triangleright$ . Playback starts.



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**Abstract**—The purpose of this study was to determine the effect of a 12-week training program on the heart rate (HR) and heart rate reserve (HRR) of sedentary middle-aged men. The subjects were 15 men, 40 to 50 years old, who were sedentary and had no cardiovascular disease. They were randomly assigned to a 12-week training program or a control group. The training program consisted of three sessions per week of aerobic exercise at 60% to 70% of the maximum HR. The control group did not exercise. The HR and HRR were measured at rest and during maximal exercise at the beginning and at the end of the 12-week period. The results showed that the training program significantly increased the HR and HRR at rest and during maximal exercise. The control group showed no significant changes. The results suggest that a 12-week training program can improve the cardiovascular fitness of sedentary middle-aged men.

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1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.



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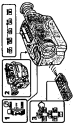
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**THE UNIVERSITY OF CHICAGO**

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...the ...



## Playing Back a Tape

To stop playback, press **□**.  
To rewind the tape, press **◀◀**.  
To advance the tape rapidly, press **▶▶**.

### Various Playback Modes

To view a still picture (playback pause)

Press **II** during playback. To resume playback, press **II** or **▷**.

To locate a scene (Picture Search)

Keep pressing **◀◀** or **▶▶** during playback. To resume normal playback, release the button.

To monitor the high-speed picture during fastforward or rewind (Skip Scan)

Keep pressing **◀◀** while rewinding or **▶▶** while advancing the tape. To resume normal playback, press **▷**.

To view the picture in a sequence of stop-motion images

Press **EDITSEARCH** in playback pause mode. If you keep pressing **EDITSEARCH**, you can view the picture playback in the forward (+) or reverse (-) direction.

To view the picture at 1/5 speed (Slow Playback) (only with the Remote Commander)

Press **1/5** on the Remote Commander during playback. To resume normal playback, press **▷**. If slow playback lasts for about 1 minute, it shifts to normal speed automatically.

### Note on playback

- Streaks appear and the sound is muted in the various playback modes.
- When still picture mode lasts for 5 minutes or more, the camcorder automatically enters stop mode.

To display the viewfinder screen indicators on the TV

Press **DISPLAY** on the Remote Commander.

To erase the indicators, press **DISPLAY** again.

To select the monitor sound - For stereo models (CCD-TR72/TR80)

Change the "HiFi SOUND" mode setting in the menu system (p.25)

## Advanced Operations

## Using Alternate Power Sources

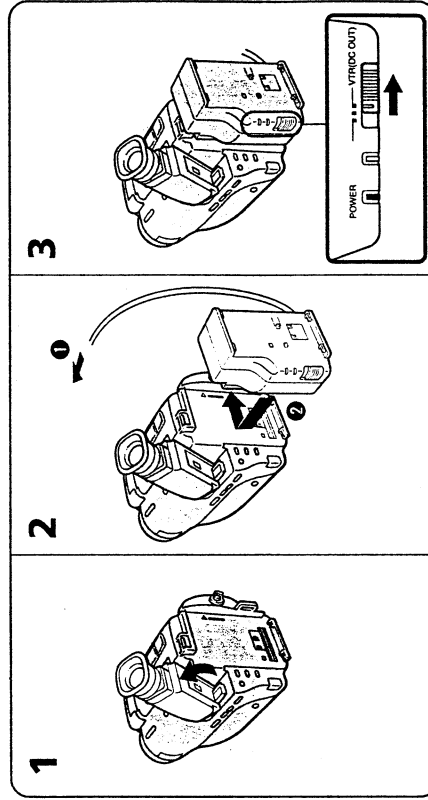
You can choose any of the following power sources for your camcorder: battery pack (P.6), house current, and 12/24 V car battery. Choose the appropriate power source depending on where you want to use your camcorder.

Place	Power source	Accessory to be used
Indoors	House current	AC power adaptor AC-V25/V25A/V25B (supplied), AC-S10, AC-V35
Outdoor	Battery pack	Battery pack NP-55 (supplied), NP-80, NP-80D, NP-77H, NP-66H, NP-60D, NP-55H
In the car	12 V or 24 V car battery	DC pack DCP-77

### Using House Current

To use the supplied AC-V25/A25A/V25B AC power adaptor:

(1) Lift up the viewfinder. (2) Connect the AC power cord to a wall outlet. Connect the bottom of the AC power adaptor to the battery mounting surface of the camcorder. (3) Set the selector to VTR (DC OUT).



### Notes on the POWER lamp

- The POWER lamp will remain lit for a while even if the unit is unplugged after use. This is normal.
- If the POWER lamp does not light, set the selector to the center position and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to VTR (DC OUT) again.

### To remove the adaptor

The adaptor is removed in the same way as the battery pack. (p.8)

## Prüfungsausschuss

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Prüfungsausschüsse zuständig.  
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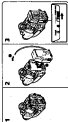
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## Using Alternate Power Sources

### Using a Car Battery

Use the DCP-77 DC pack (not supplied). Connect the cord of the DC pack to the cigarette lighter socket of a car (12 V or 24 V). Connect the DC pack to the battery mounting surface of the camcorder.

### To remove the DC pack

The DC pack is removed in the same way as the battery pack. (p.8)

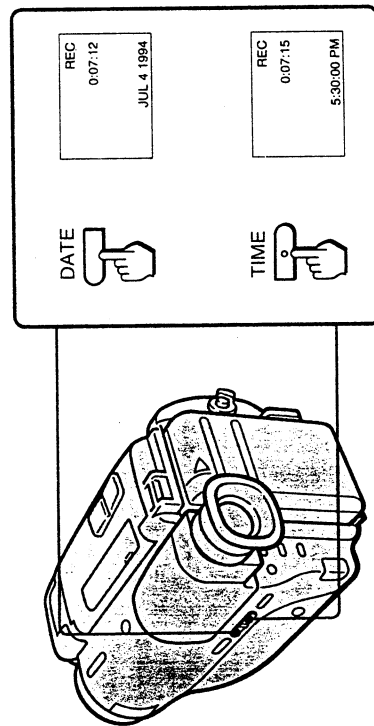
### Options for Charging the Battery Pack

- AC-S10 AC power adaptor:  
You can charge a battery pack whether it is used up or not with this adaptor because it has a discharging function.
- BC-S10 portable battery charger (ideal for travel):  
You can charge a battery pack on 100 — 240 V AC current.

## Recording with the Date or Time

Before you start recording, press DATE or TIME. You can record the date or time displayed in the viewfinder with the picture. You cannot record the date and time at the same time. Except for the date or time indicator, no indicator in the viewfinder is recorded.

The clock is set to the East Coast Standard Time at the factory.



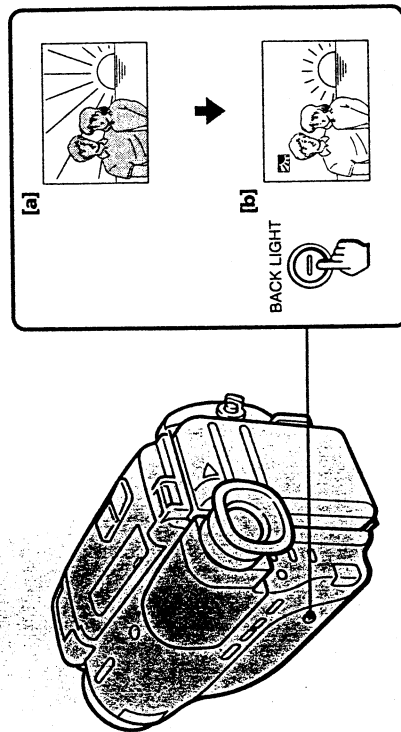
### To Stop Recording with the Date or Time

Press DATE or TIME again. Recording continues.

## Shooting with Backlighting


When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT.

Press BACK LIGHT. The  indicator appears inside the viewfinder.



- [a] Subject is too dark because of backlight.
- [b] Subject becomes bright with backlight compensation.

### After shooting

Press BACK LIGHT again to let the  indicator go out under normal lighting condition. Otherwise, the picture will be too bright under normal lighting condition.

### This function is also effective under following conditions:

- On the snow e.g. at the ski resort
- At the beach under strong sunshine
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function.

# Shooting an arrow: Recording a thing

When you shoot an arrow with the right arrow, the arrow is a thing with the right shape, size, and weight.

When you shoot an arrow, the arrow is a thing with the right shape, size, and weight.



The target is a thing with the right shape, size, and weight.

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# Recording an arrow with the Science Process

When you shoot an arrow with the right arrow, the arrow is a thing with the right shape, size, and weight.

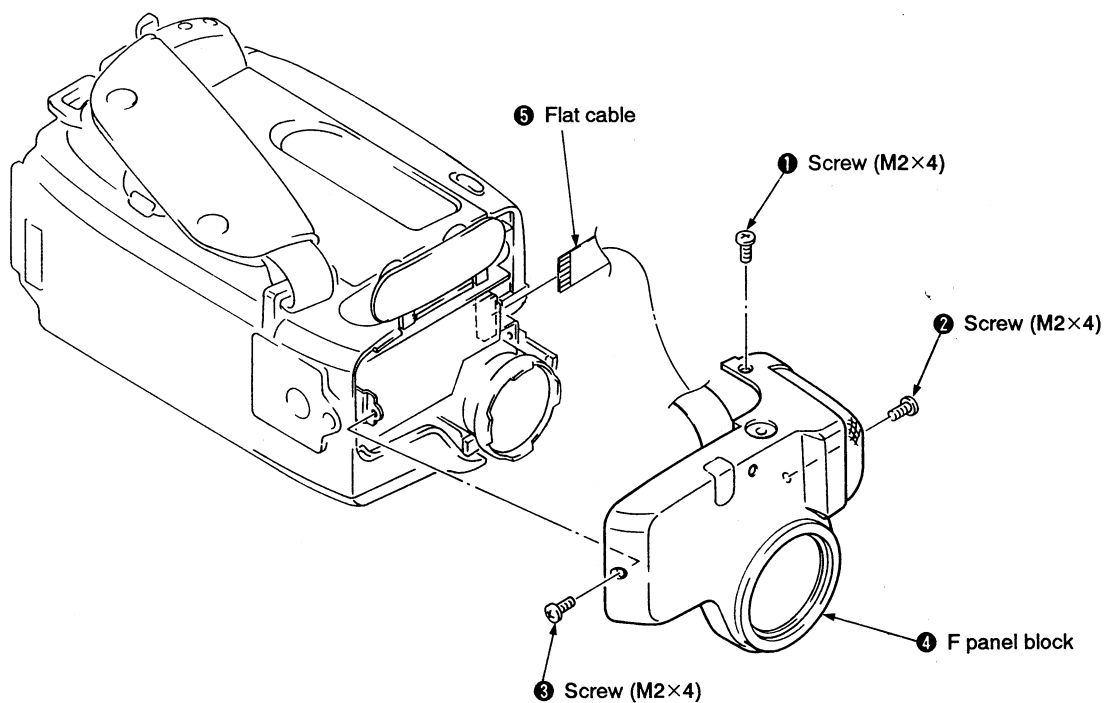


The target is a thing with the right shape, size, and weight.

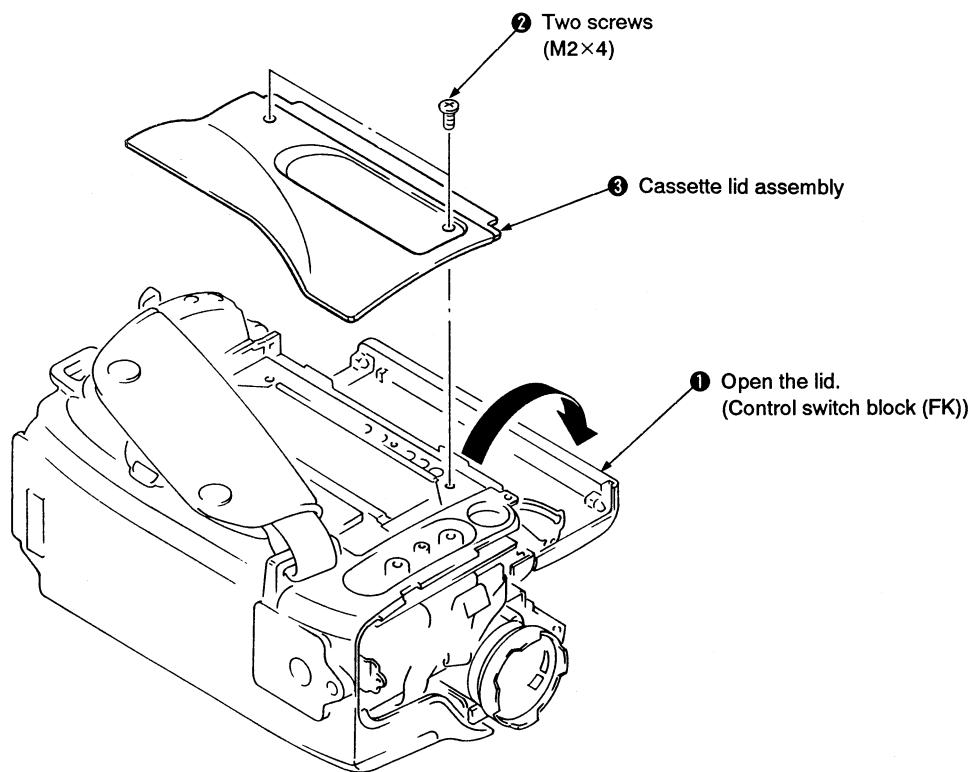


## SECTION 2 DISASSEMBLY

### 2-1. REMOVAL OF F PANEL BLOCK

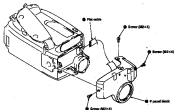


### 2-2. REMOVAL OF CASSETTE LID ASSEMBLY

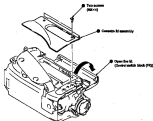


## SECTION 2 DISASSEMBLY

### 2-1. REMOVAL OF F-PANEL BLOCK

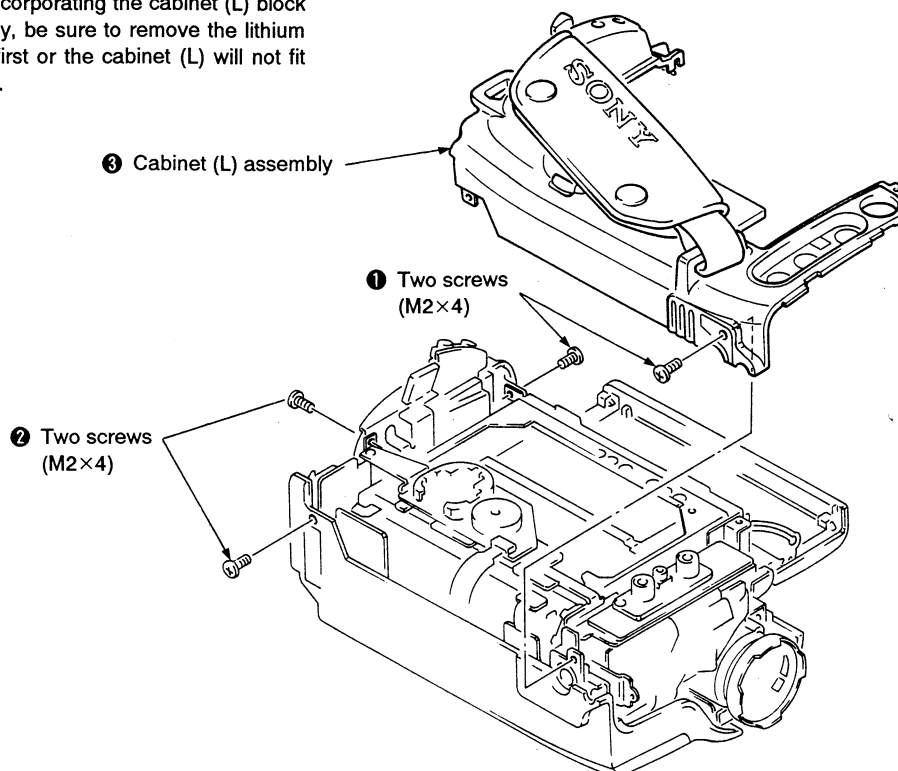


### 2-2. REMOVAL OF CASSETTE LID ASSEMBLY

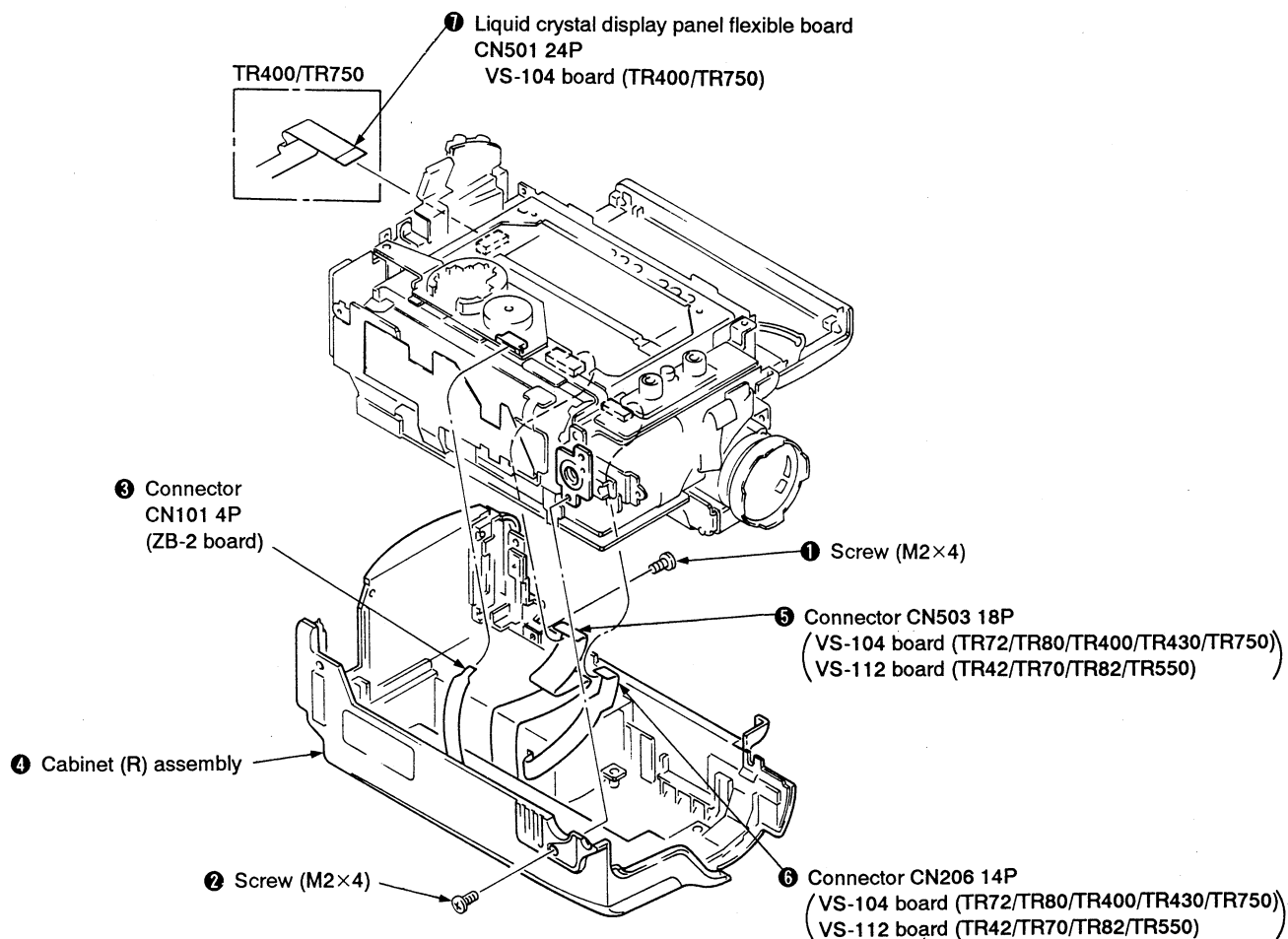


## 2-3. REMOVAL OF CABINET (L) ASSEMBLY

**Note:** When incorporating the cabinet (L) block assembly, be sure to remove the lithium battery first or the cabinet (L) will not fit properly.

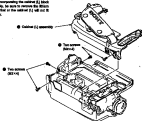


## 2-4. REMOVAL OF CABINET (R) ASSEMBLY

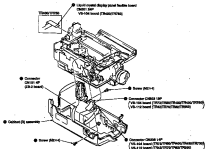


### 5-1. PURPOSE OF CURRENT ACCOUNT

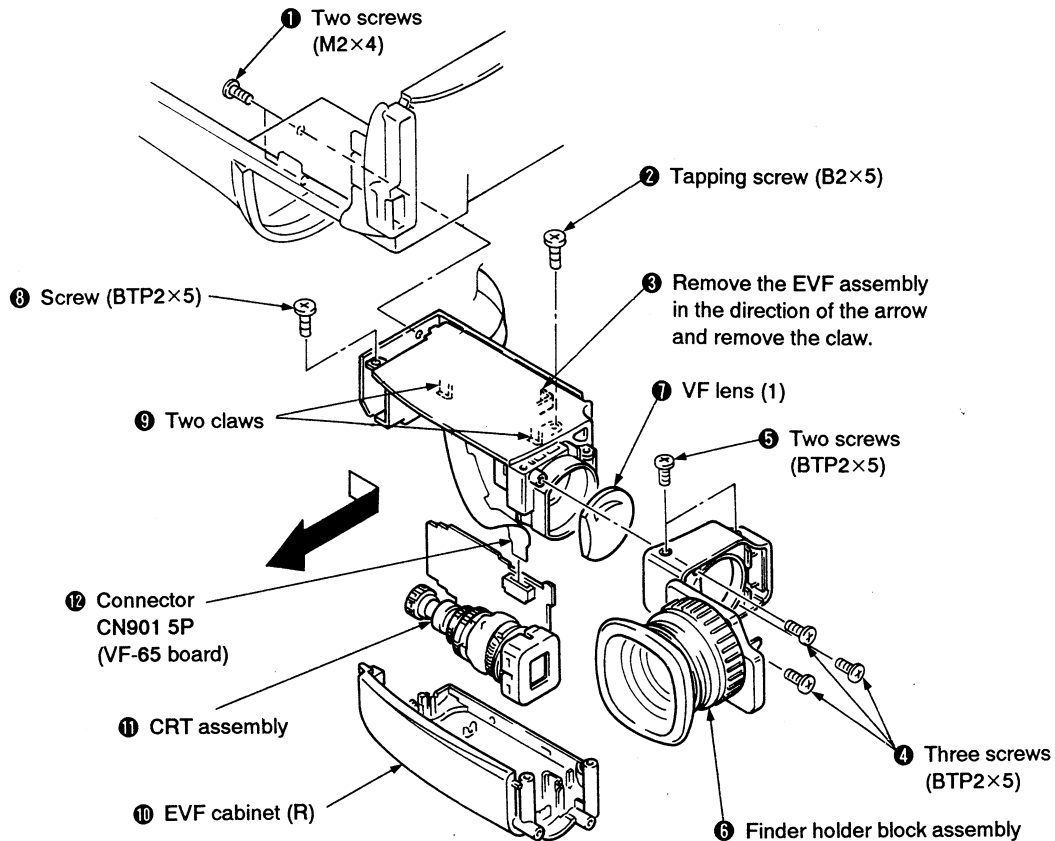
**Notes:** When incorporating the railroad (L) stock ownership, be sure to remove the stock history that on the railroad (L) roll out is provided.



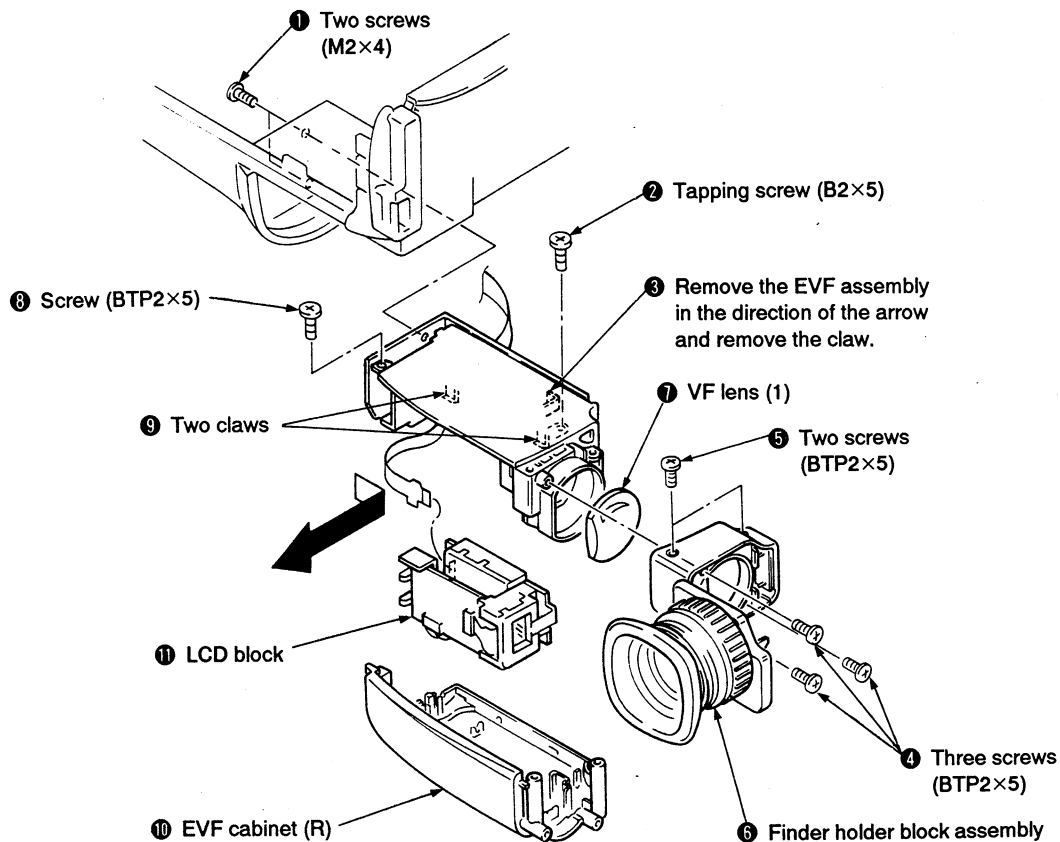
### THE EFFECT OF CEMENT ON WATER



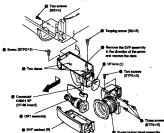
## 2-5. REMOVAL OF EVF ASSEMBLY (TR42/TR72/TR82/TR400/TR430/TR550/TR750)



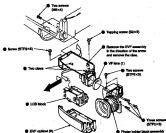
## 2-5. REMOVAL OF EVF ASSEMBLY (TR70/TR80)



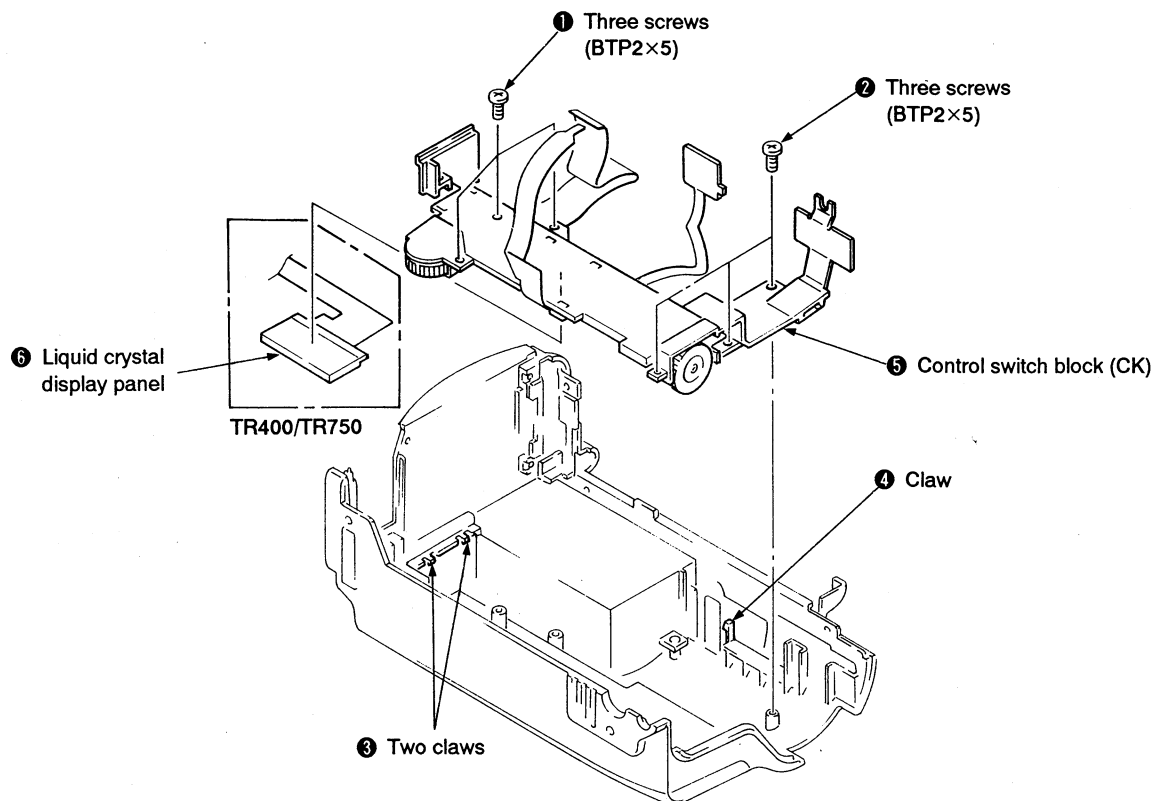
**3-5. REMOVAL OF EFP ASSEMBLY  
(TR40TRFATRA4TR400TR400TR400TR400)**



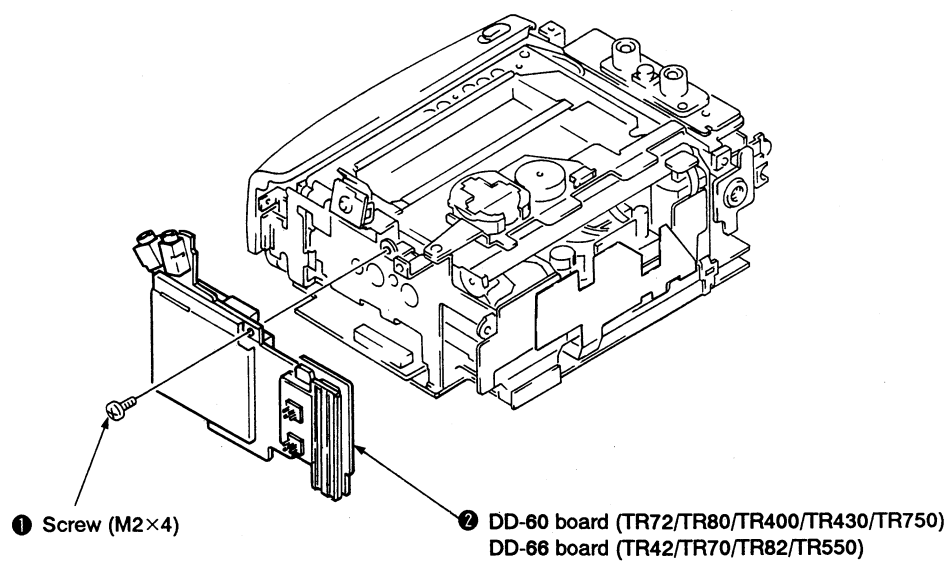
**3-6. REMOVAL OF EFP ASSEMBLY (TR40TR400)**



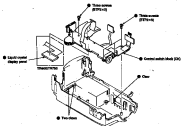
## 2-6. REMOVAL OF CONTROL SWITCH BLOCK (CK)



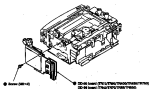
## 2-7. REMOVAL OF DD-60 BOARD (TR72/TR80/TR400/TR430/TR750) REMOVAL OF DD-66 BOARD (TR42/TR70/TR82/TR550)



#### 2-6. REMOVAL OF CONTROL SWITCH BLOCK (30)

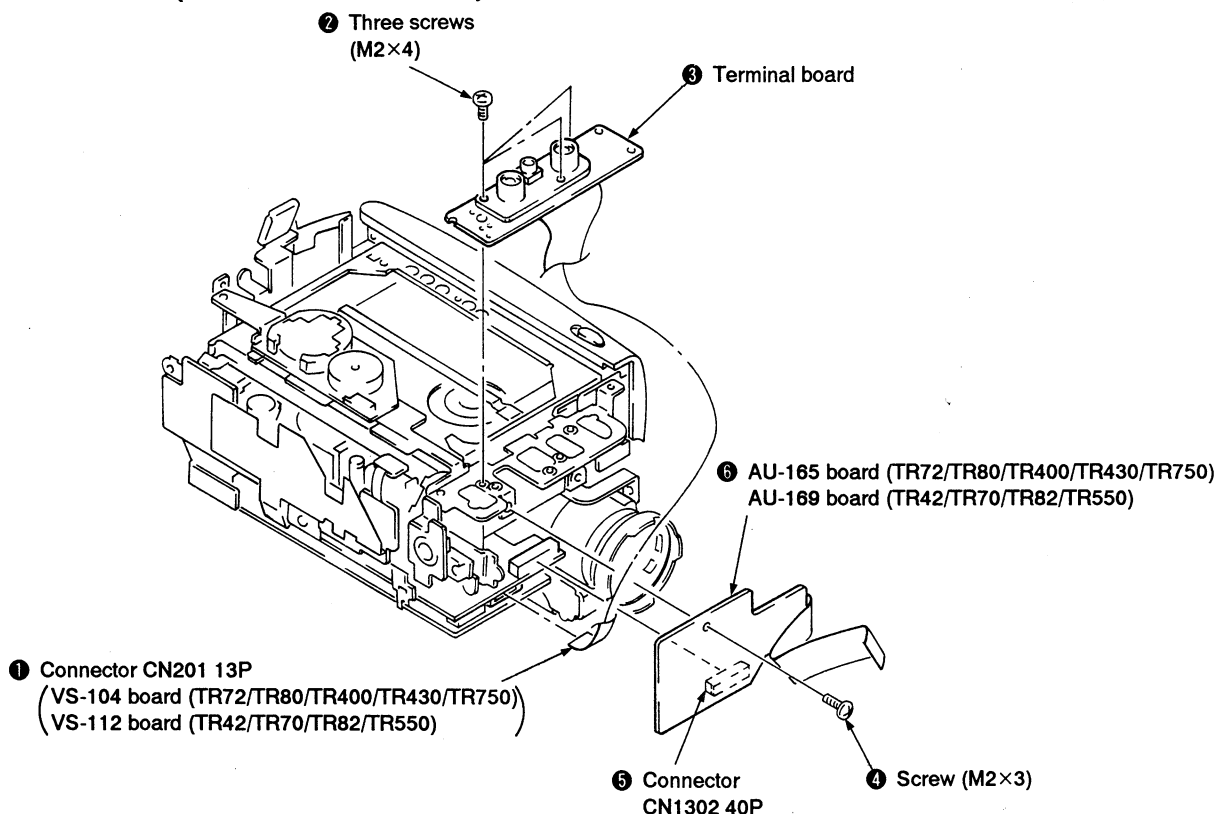


#### 2-7. REMOVAL OF 32-BE BOARD (70) FROM TRANSFORMER (70) REMOVAL OF 32-BE BOARD (70) FROM TRANSFORMER (70)

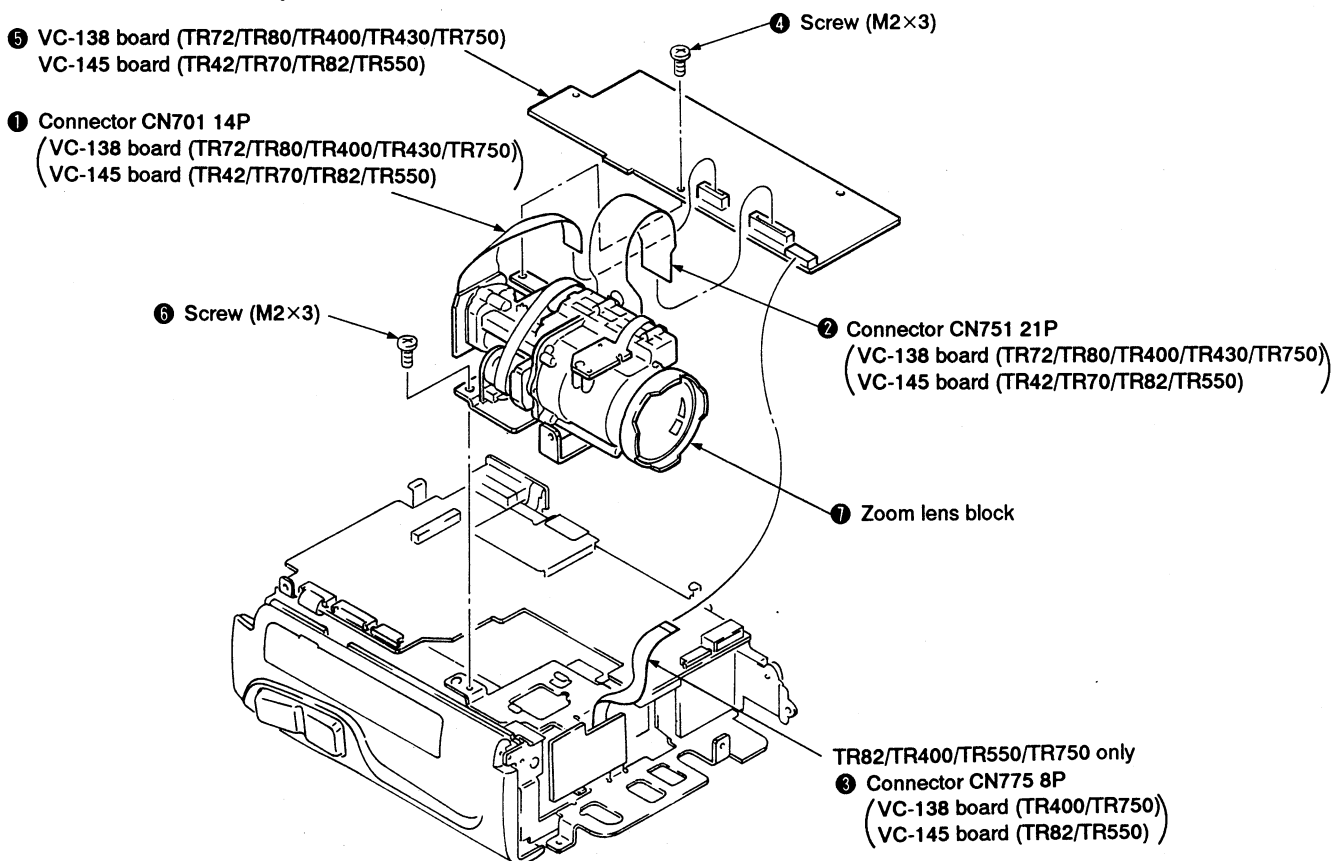




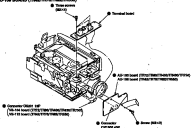
**2-8. REMOVAL OF TERMINAL BOARD AND  
AU-165 BOARD (TR72/TR80/TR400/TR430/TR750),  
AU-169 BOARD (TR42/TR70/TR82/TR550)**



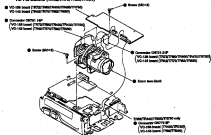
**2-9. REMOVAL OF ZOOM LENS BLOCK AND  
VC-138 BOARD (TR72/TR80/TR400/TR430/TR750),  
VC-145 BOARD (TR42/TR70/TR82/TR550)**



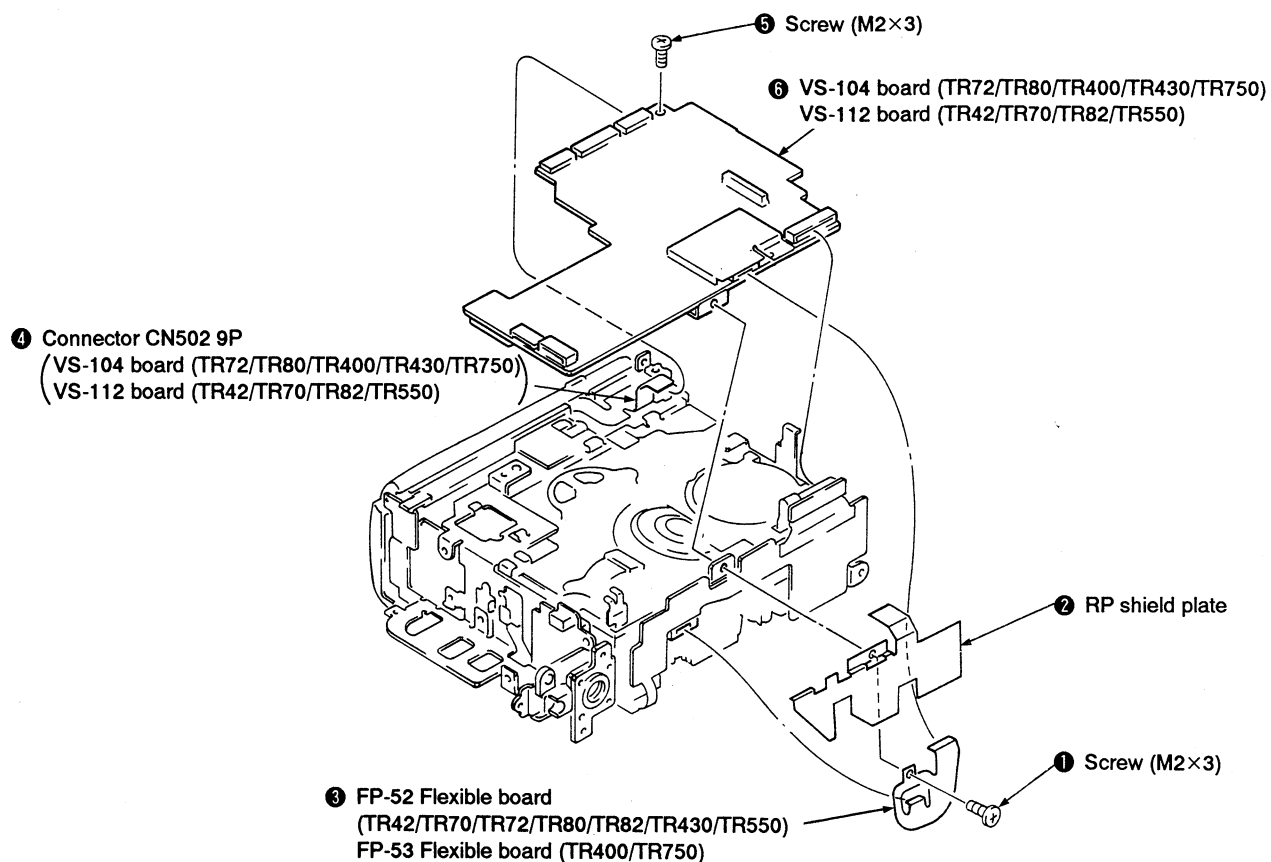
#### 2-4. REMOVAL OF TERMINAL BOARDS AND ALL-INS BOARDS (TERMINATING/CONTINUATION)



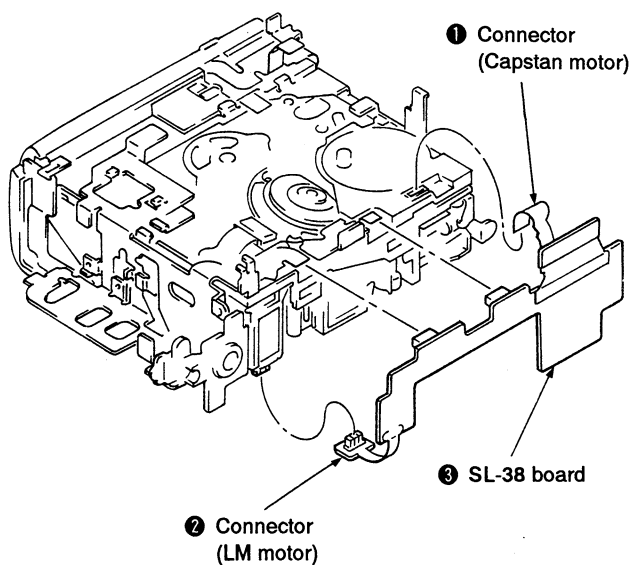
### 3-8. REMOVAL OF DOOM LINE BLOCK AND VC-18 SCARS (TWO/TWO/TWO/TWO/TWO/TWO)



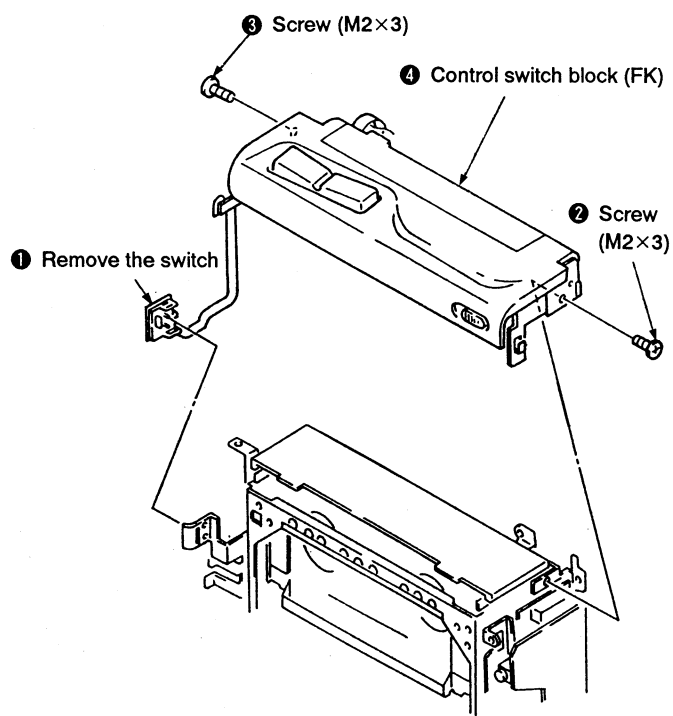
**2-10. REMOVAL OF VS-104 BOARD (TR72/TR80/TR400/TR430/TR750)  
REMOVAL OF VS-112 BOARD (TR42/TR70/TR82/TR550)**



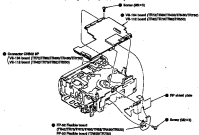
**2-11. REMOVAL OF SL-38 BOARD**



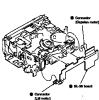
**2-12. REMOVE OF CONTROL SWITCH BLOCK (FK)**



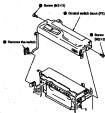
**3-10. REMOVAL OF VS-104 BOARD (TR1/TR2/TR300/TR400/TR500)  
REMOVAL OF VS-112 BOARD (TR400/TR500/TR600)**



**3-11. REMOVAL OF SL-58 BOARD**

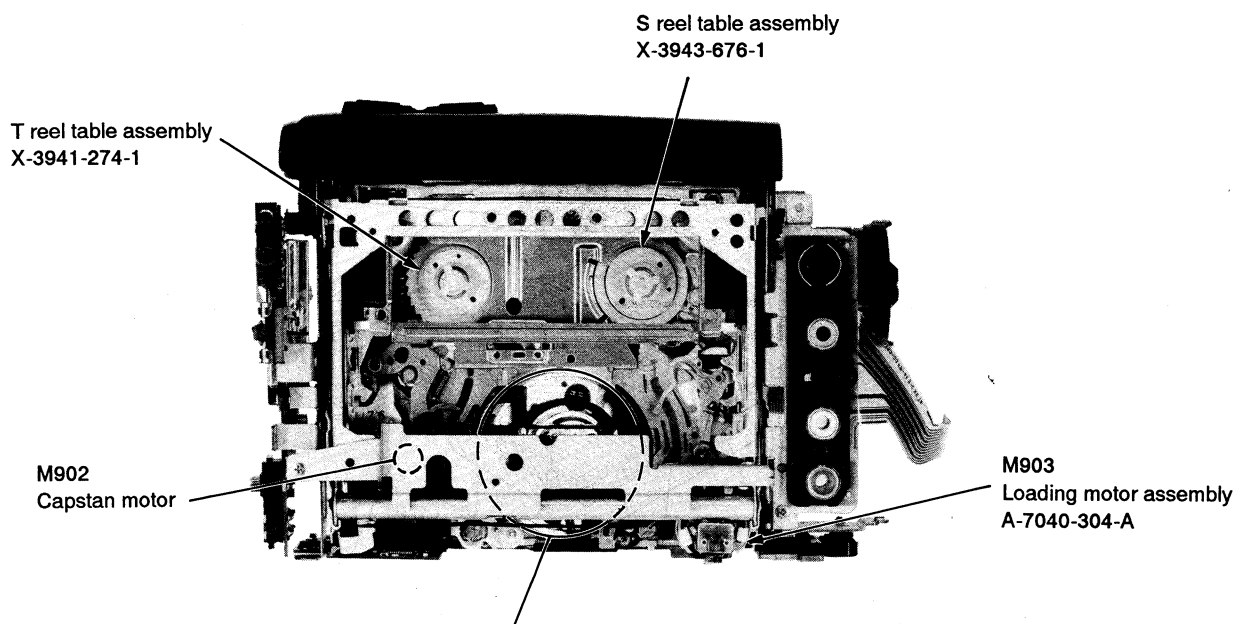


**3-12. REMOVE OF CONTROL SWITCH BLOCK (F6)**



## 2-13. INTERNAL VIEWS

— Left side —



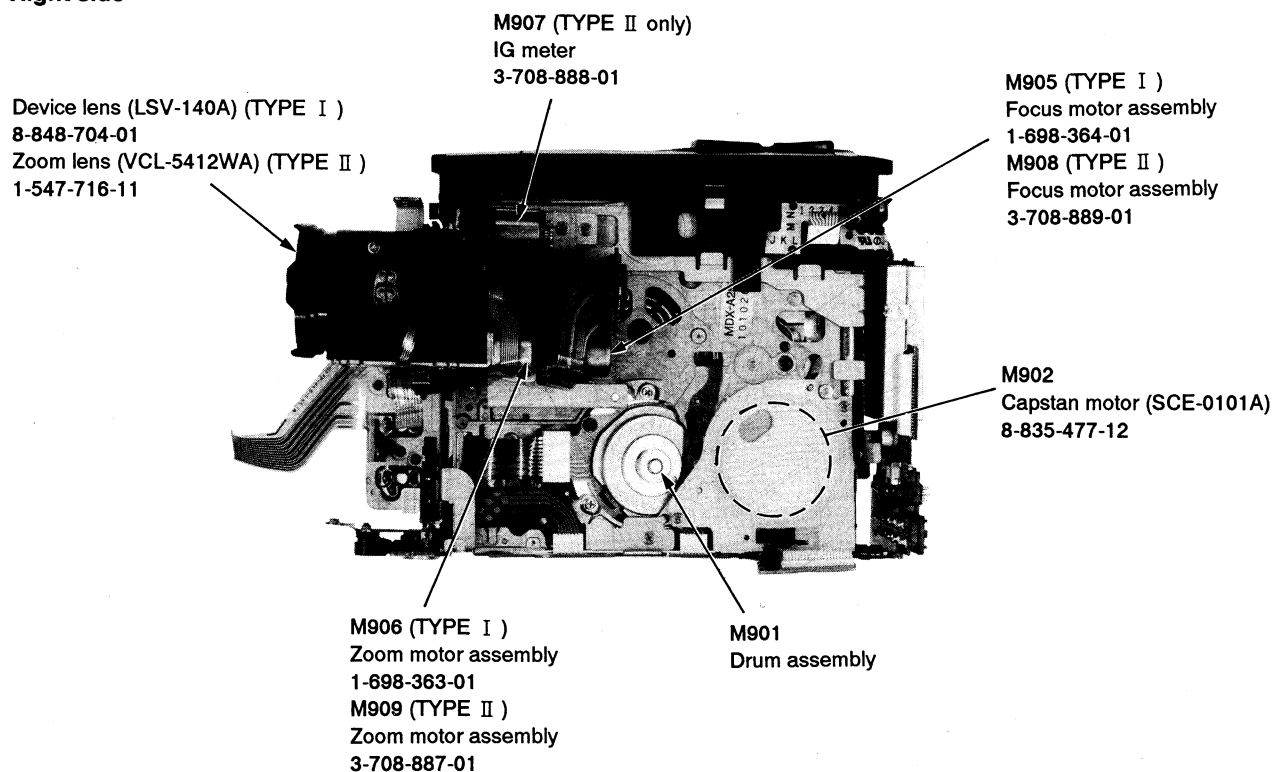
M901 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)

Drum assembly	DGH-78A-R	A-7048-564-A
Upper drum assembly	DGR-78-R	A-7049-501-A

M901 (TR400/TR750)

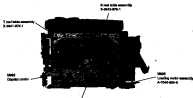
Drum assembly	DGH-92A-R	A-7048-633-A
Upper drum assembly	DGR-92-R	A-7049-567-A

— Right side —



3-12 1975-1976 1977-1978

1000



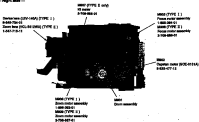
**Abstract**

Direct assembly	10/10/1997	1. 10/10/1997-1
Upper frame assembly	10/10/1997	1. 10/10/1997-1

**Abstract**

Direct assembly	2008-2010 (1)	1-70-00-000-1
Upper direct assembly	2008-2010 (1)	1-70-00-000-1

100









## 4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

### THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

(In addition to this, the necessary note is printed in each block.)

#### For printed wiring boards.

- Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated.)
- Circled numbers refer to waveforms.
- (B) or (F), etc. of capacitors indicate the temperature characteristics.
- : Through hole.

#### Caution:

Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.  
(Conductor Side)

Parts face side: Parts on the parts face side seen from the parts face are indicated.  
(Component side)

#### For schematic diagrams.

- Caution when replacing chip parts.  
New parts must be attached after removal of chip.  
Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.  
Chip resistor are 1/10W unless otherwise noted.  
k $\Omega$ : 1000 $\Omega$ , M $\Omega$ : 1000k $\Omega$ .
- All capacitors are in  $\mu$ F unless otherwise noted. pF:  $\mu$  $\mu$ F.  
50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- nonflammable resistor.
- fusible resistor.
- panel designation.
- internal component.
- adjustment for repair.
- B+ Line.
- B- Line.
- IN/OUT direction of (+, -) B LINE.
- Circled numbers refer to waveforms.

#### Note:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

#### Note:

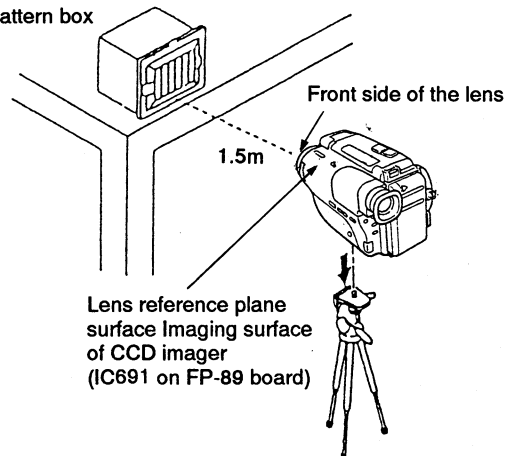
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

#### Measuring conditions voltage value and waveform. (CAMERA block)

- The object is color bar chart of pattern box.
- Voltages are dc between ground and measurement points.  
Readings are taken with a digital multimeter (DC 10M $\Omega$ ).
- Voltage variations may be noted due to normal production tolerances.

#### 1. Connection Pattern box



#### 2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

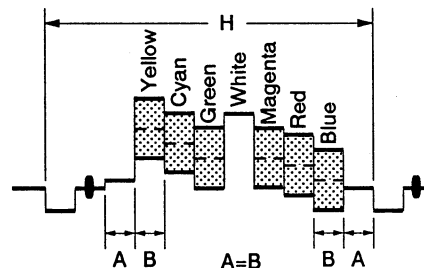


Fig. a (Video output terminal output waveform)

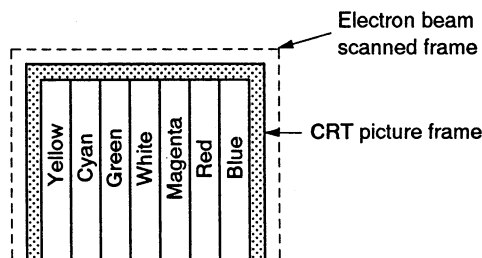


Fig. b (Picture on monitor TV)

#### (VIDEO, SERVO/SYSTEM CONTROL, AUDIO, LCD CONTROL)

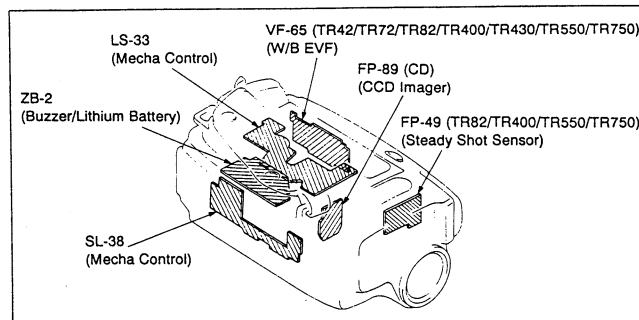
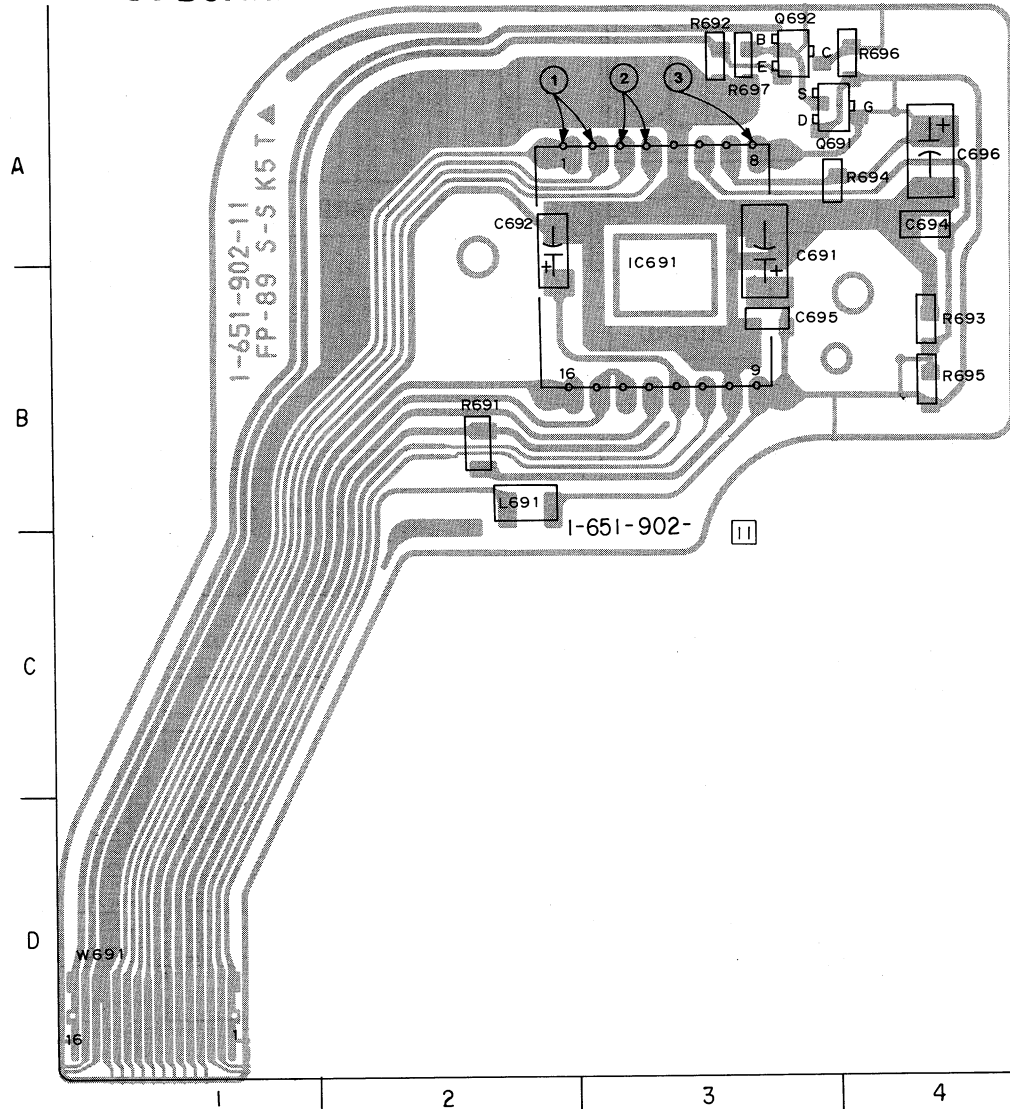
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10M $\Omega$ ).
- Voltage variations may be noted due to normal production tolerances.



# FP-89 (CCD IMAGER) PRINTED WIRING BOARD

— Ref. No. FP-89 BOARD: 3000 series —

## FP-89 BOARD





# FP-89 (CCD IMAGER) SCHEMATIC DIAGRAM

— Ref. No. FP-89 BOARD: 3000 series —

A

B

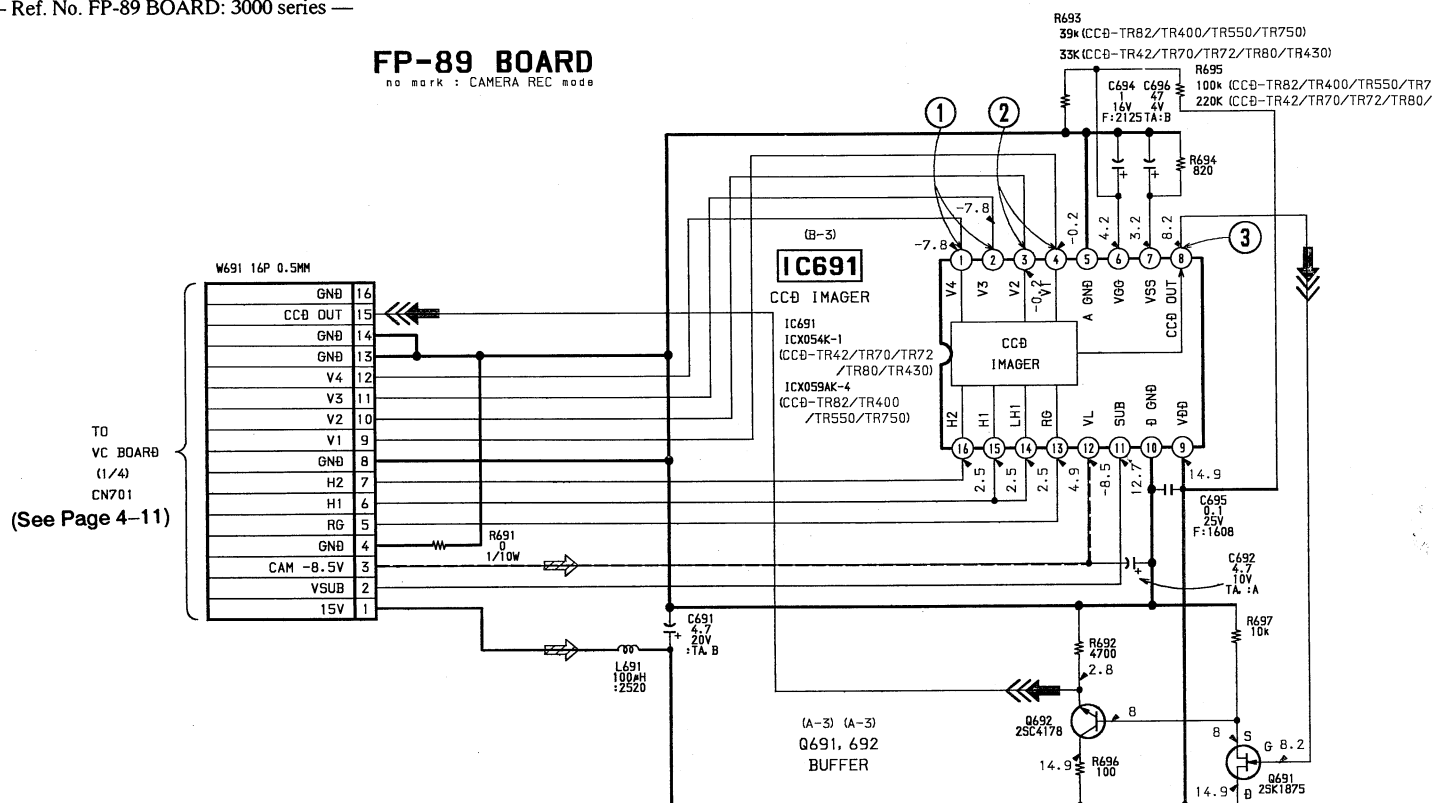
C

D

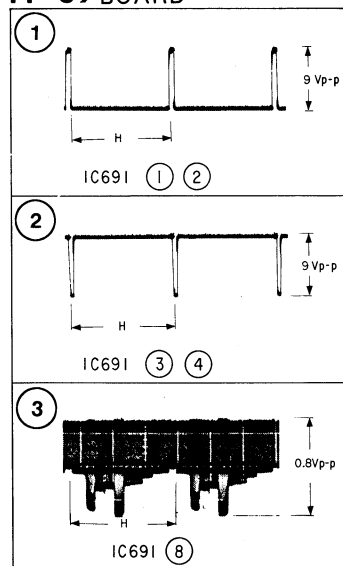
E

## FP-89 BOARD

no mark : CAMERA REC mode



## FP-89 BOARD

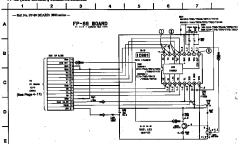


## • SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡➡➡
PB			

## Note on the CCD Imager replacement

- Some of this units require the correction data by the CCD imager (IC691 on FP-89 board), some do not. The correction data is input in F page and addresses 1D to 2C of the camera micro processor (IC602 on VC board), and also written on the CCD data label put on the shield case (upper) of the DD board. The correction data is not required for the CCD imager supplied for repair. Therefore, when replacing the CCD imager to which the CCD data label is put, remove the CCD data label and input 00 to F page and addresses 1D to 2C of the camera micro processor. Refer to the camera adjustment for input method.
- The CCD imager is not mounted for the already mounted FP-89 board supplied as the repair parts. When replacing the FP-89 board, remove the CCD imager from the old board and install on the new board.
- Perform all adjustments of the camera block when the CCD imager has been replaced.
- Handle the CCD imager with attention such as MOS IC as it may be broken by static electricity in the structure. Also, prevent the receiving light section from dust attached and strong light.



FP-88 BOARD



• SIGNAL PATH

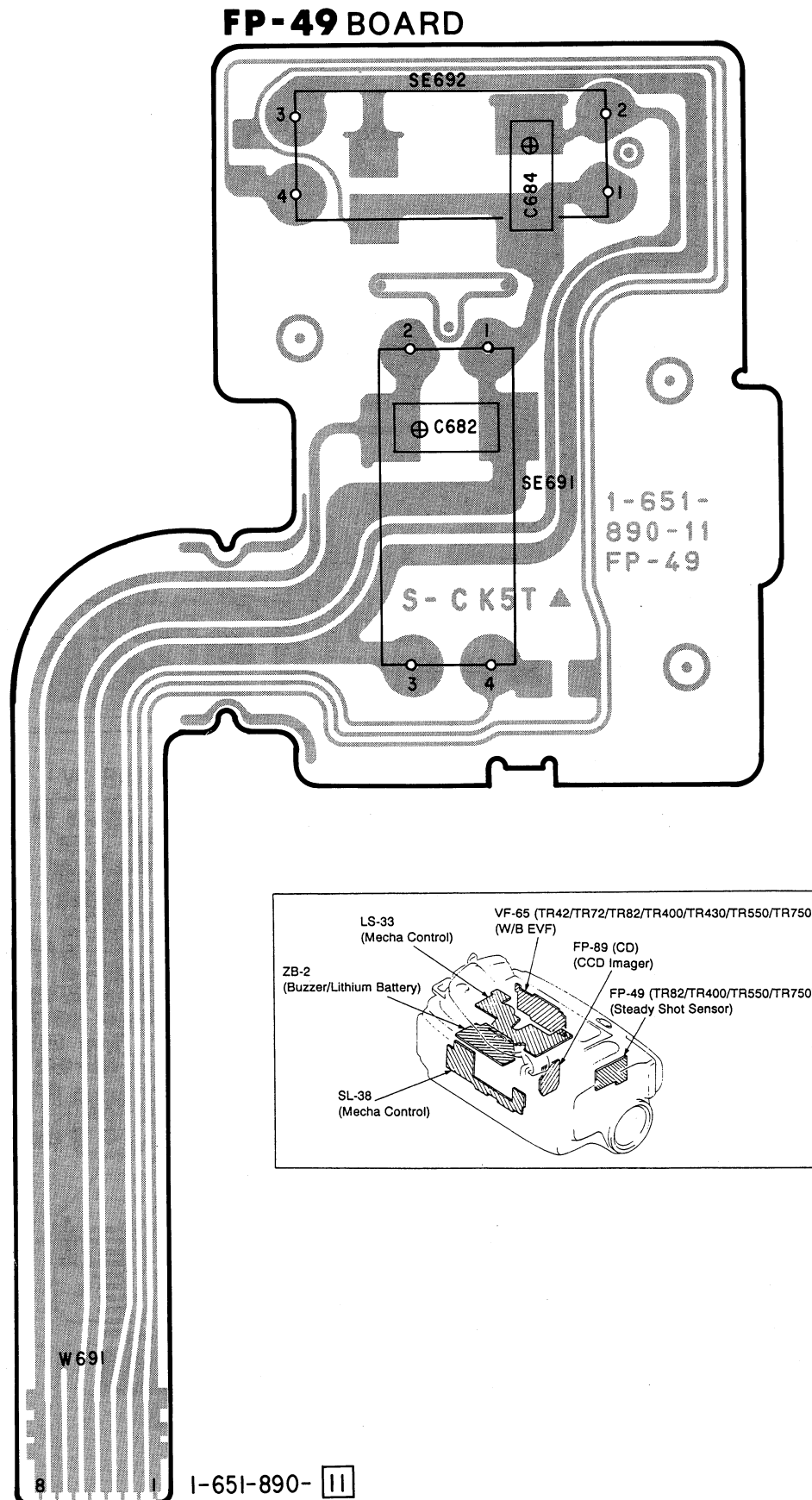
	VIDEO SIGNAL		
	CHROMA	Y	TELEVISION
REC			
PG			

Notes on the CCD Imager replacement

- Some of this note applies to recording data by the CCD Imager (CCIM on FP-88 board), some do not.  
The connection data is input to P page and addresses 00 to 0C of the camera video processor (VAMP or VC board), and also video in on the CCD data label pin on the signal area (upper) of the (CC) board.  
The connection data is not required for the CCD Imager supplied for repair. Therefore, when replacing the CCD Imager to which the CCD data label is put, connect the CCD data label and input 00 to P page and addresses 00 to 0C of the camera video processor. Refer to the camera adjustment for input method.
- The CCD Imager is not required for the already released FP-88 board supplied to the repair point.  
When replacing the FP-88 board, remove the CCD Imager from the old board and install on the new board.
- Perform all adjustments of the camera block when the CCD Imager has been replaced.
- Handle the CCD Imager with attention such as ESDS IC as it may be broken by static electricity in its operation.  
Also, prevent the recording light surface from dust scratch and strong light.

# **FP-49 (STEADY SHOT SENSOR) PRINTED WIRING BOARD (TR82/TR400/TR550/TR750)**

— Ref. No. FP-49 BOARD: 3000 series —





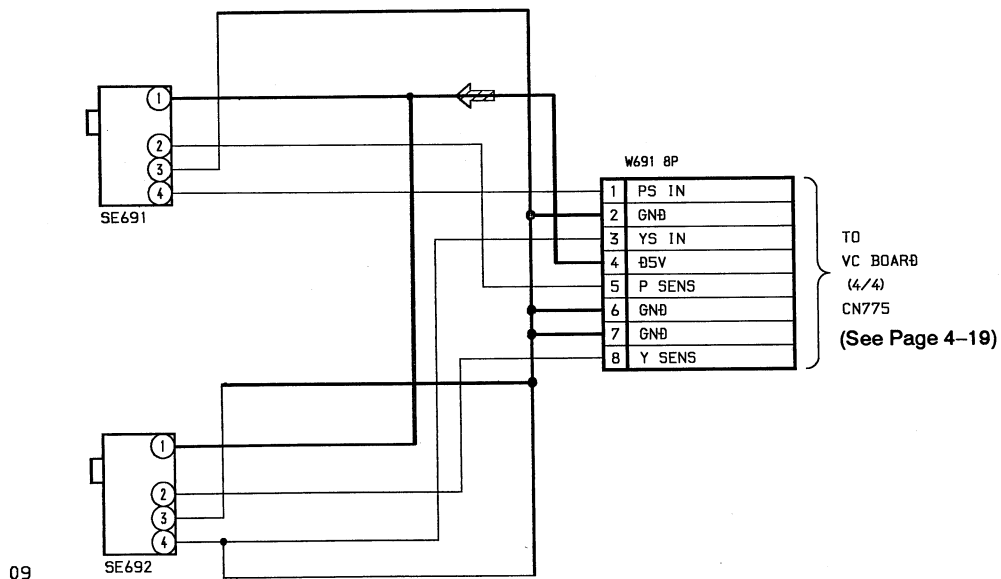


## FP-49 (STEADY SHOT SENSOR) SCHEMATIC DIAGRAM (TR82/TR400/TR550/TR750)

— Ref. No. FP-49 BOARD: 3000 series —

### FP-49 BOARD

(CCD-TR82/TR400/TR550/TR750)



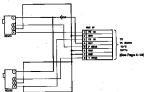
## FP-45 (STEADY SHOT SYSTEM) AUTOMATIC CAMERA (TR80/TR400/TR550/TR750)

1 2 3 4 5 6 7

— (Not for FP-45 BOARD) —

### FP-45 BOARD

FOR TR80/TR400/TR550/TR750



## SECTION 5

### REPAIR PARTS LIST



#### 5-1. EXPLODED VIEWS


##### NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.

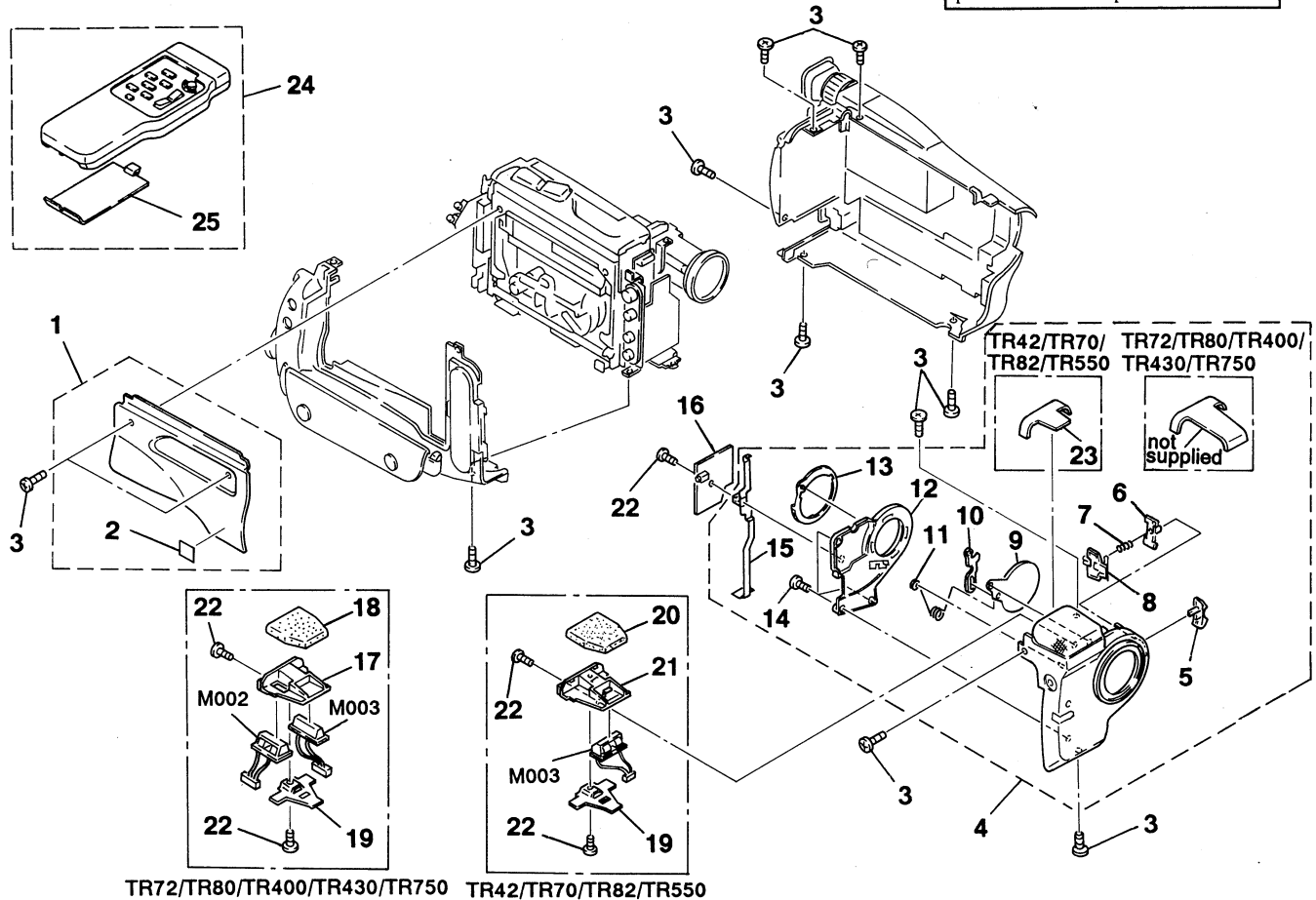
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark  or dotted line with mark  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

#### 5-1-1. F PANEL BLOCK ASSEMBLY



TR72/TR80/TR400/TR430/TR750 TR42/TR70/TR82/TR550

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3943-920-1	LID ASSY, CASSETTE (TR72)		11	3-958-637-01	SPRING, LC	
1	X-3943-927-1	LID ASSY, CASSETTE (TR82)		* 12	3-958-605-01	RETAINER, LC	
1	X-3944-005-1	LID ASSY, CASSETTE (TR80)		* 13	3-958-615-01	RING, DRIVING	
1	X-3944-006-1	LID ASSY, CASSETTE (TR70)		14	3-719-601-01	SCREW (B2X5), TAPPING	
1	X-3944-078-1	LID ASSY, CASSETTE (TR42)		* 15	3-958-953-01	PLATE, GROUND, MA	
1	X-3944-084-1	LID ASSY, CASSETTE (TR550)		* 16	A-7063-956-A	MA-199 BOARD, COMPLETE (TR42/TR70/TR82/TR550)	
1	X-3944-085-1	LID ASSY, CASSETTE (TR430)		* 16	A-7063-962-A	MA-179 BOARD, COMPLETE (TR72/TR80/TR400/TR430/TR750)	
1	X-3944-086-1	LID ASSY, CASSETTE (TR400)		* 17	X-3944-205-1	HOLDER ASSY (S), MICROPHONE (TR72/TR80/TR400/TR430/TR750)	
1	X-3944-088-1	LID ASSY, CASSETTE (TR750)		* 18	3-958-951-01	CUSHION (S), MICROPHONE (TR72/TR80/TR400/TR430/TR750)	
2	3-703-710-41	STICKER, SONY SYMBOL (12)		* 19	3-958-952-01	PLATE, FIXED, MICROPHONE	
3	3-719-381-01	SCREW (M2X4)		* 20	3-958-954-01	CUSHION (M), MICROPHONE (TR42/TR70/TR82/TR550)	
4	X-3943-922-1	PANEL ASSY, F (TR72/TR80/TR430)		* 21	X-3944-206-1	HOLDER ASSY (M), MICROPHONE (TR42/TR70/TR82/TR550)	
4	X-3943-925-1	PANEL ASSY, F (TR82/TR550)		22	3-948-339-01	SCREW (BTP) (2X5), HEAD	
4	X-3944-035-1	PANEL ASSY, F (TR70)		23	3-958-610-01	CAP (M), MICROPHONE (TR42/TR70/TR82/TR550)	
4	X-3944-062-1	PANEL ASSY, F (TR400/TR750)		24	1-467-574-21	REMOTE COMMANDER (RMT-708)	
4	X-3944-063-1	PANEL ASSY, F (TR42)		25	3-958-131-01	LID, BATTERY CASE (for RMT-708)	
5	3-958-614-01	SWITCH, POWER		M002	1-542-162-11	MICROPHONE UNIT	
6	3-958-633-01	BUTTON, POWER PUSH					
7	3-303-973-01	SPRING, COMPRESSION					
* 8	3-958-609-01	PLATE, FUNCTION, POWER					
9	3-958-616-01	COVER, LENS					
* 10	3-958-632-01	LEVER, LC					

## SECTION 5 REPAIR PARTS LIST

### 5-1. EXPLODED VIEW

#### NOTES

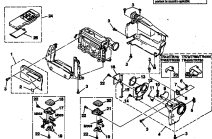
- 1. JCL All items standardized parts, as they may have some difference from the original one.
- 2. The standardized parts with no reference number in the exploded view are supplied.

- 3. Items marked "A" or "B" are not marked when they are not required for the entire series. Items only should be indicated when ordering these items.
- 4. Hardware (standard) items given in the list of the parts list.

For replacement, identify by mark "A" or "B" with each "A" or "B" in the exploded view.

For replacement, identify by mark "A" or "B" with each "A" or "B" in the exploded view.

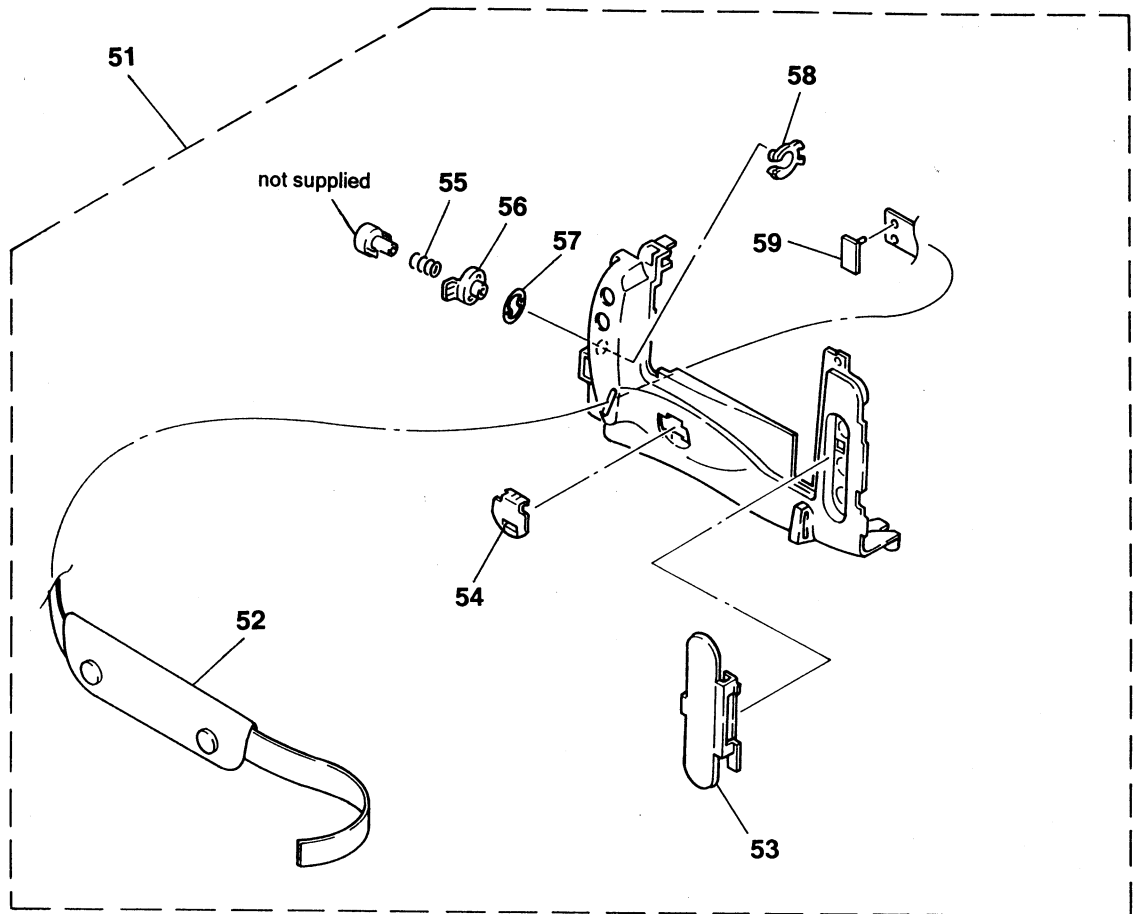
### 5-1-1. P PANEL BLOCK ASSEMBLY



TR42/TR70/TR72/TR80/TR82/TR400/TR430/TR550/TR750

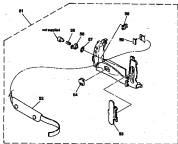
Ref. No.	Part No.	Description	Unit	Ref. No.	Part No.	Description	Unit
1	1-100-001-01	MAIN PANEL BLOCK	1	14	1-100-001-01	MAIN PANEL BLOCK	1
2	1-100-001-02	MAIN PANEL BLOCK	1	15	1-100-001-01	MAIN PANEL BLOCK	1
3	1-100-001-03	MAIN PANEL BLOCK	1	16	1-100-001-01	MAIN PANEL BLOCK	1
4	1-100-001-04	MAIN PANEL BLOCK	1	17	1-100-001-01	MAIN PANEL BLOCK	1
5	1-100-001-05	MAIN PANEL BLOCK	1	18	1-100-001-01	MAIN PANEL BLOCK	1
6	1-100-001-06	MAIN PANEL BLOCK	1	19	1-100-001-01	MAIN PANEL BLOCK	1
7	1-100-001-07	MAIN PANEL BLOCK	1	20	1-100-001-01	MAIN PANEL BLOCK	1
8	1-100-001-08	MAIN PANEL BLOCK	1	21	1-100-001-01	MAIN PANEL BLOCK	1
9	1-100-001-09	MAIN PANEL BLOCK	1	22	1-100-001-01	MAIN PANEL BLOCK	1
10	1-100-001-10	MAIN PANEL BLOCK	1				
11	1-100-001-11	MAIN PANEL BLOCK	1				
12	1-100-001-12	MAIN PANEL BLOCK	1				
13	1-100-001-13	MAIN PANEL BLOCK	1				
14	1-100-001-14	MAIN PANEL BLOCK	1				
15	1-100-001-15	MAIN PANEL BLOCK	1				
16	1-100-001-16	MAIN PANEL BLOCK	1				
17	1-100-001-17	MAIN PANEL BLOCK	1				
18	1-100-001-18	MAIN PANEL BLOCK	1				
19	1-100-001-19	MAIN PANEL BLOCK	1				
20	1-100-001-20	MAIN PANEL BLOCK	1				
21	1-100-001-21	MAIN PANEL BLOCK	1				
22	1-100-001-22	MAIN PANEL BLOCK	1				

## 5-1-2. CABINET (L) BLOCK ASSEMBLY



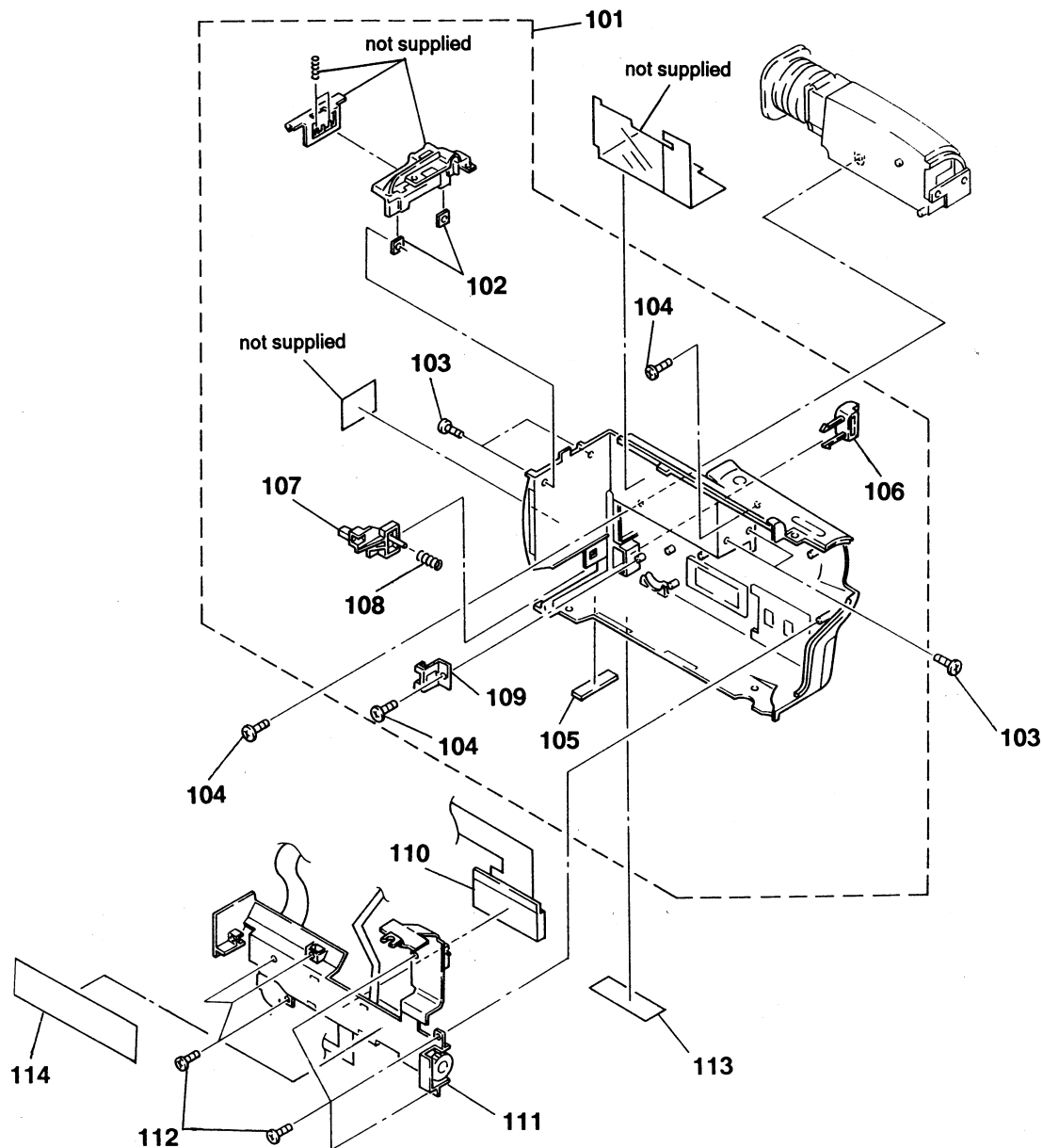
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	X-3943-923-1	CABINET (L) ASSY (TR72/TR80/TR430)		55	3-578-221-00	SPRING, COMPRESSION	
51	X-3943-924-1	CABINET (L) ASSY (TR42/TR70/TR82/TR550)		56	3-942-985-01	KNOB, STAND-BY	
51	X-3944-037-1	CABINET (L) ASSY (TR400/TR750)		57	3-736-364-01	SPRING	
52	3-736-807-01	BELT, GRIP		58	3-942-953-01	HOLDER, STAND-BY KNOB	
53	3-958-606-01	COVER, JACK		59	3-942-895-01	STOPPER, BELT	
54	3-958-608-01	LID, LITHIUM POWER					

# 8-1-8. GARNET (L) BLOCK ASSEMBLY



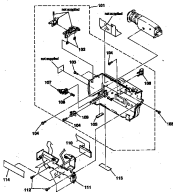
Ref. No.	Part No.	Description	Mount	Ref. No.	Part No.	Description	Mount
1	1-400-200-1	BRACKET, L	100	1	1-400-200-1	BRACKET, L	100
2	1-400-200-2	BRACKET, R	100	2	1-400-200-2	BRACKET, R	100
3	1-400-200-3	BRACKET, L	100	3	1-400-200-3	BRACKET, L	100
4	1-400-200-4	BRACKET, R	100	4	1-400-200-4	BRACKET, R	100
5	1-400-200-5	BRACKET, L	100	5	1-400-200-5	BRACKET, L	100
6	1-400-200-6	BRACKET, R	100	6	1-400-200-6	BRACKET, R	100
7	1-400-200-7	BRACKET, L	100	7	1-400-200-7	BRACKET, L	100
8	1-400-200-8	BRACKET, R	100	8	1-400-200-8	BRACKET, R	100
9	1-400-200-9	BRACKET, L	100	9	1-400-200-9	BRACKET, L	100
10	1-400-200-10	BRACKET, R	100	10	1-400-200-10	BRACKET, R	100
11	1-400-200-11	BRACKET, L	100	11	1-400-200-11	BRACKET, L	100
12	1-400-200-12	BRACKET, R	100	12	1-400-200-12	BRACKET, R	100
13	1-400-200-13	BRACKET, L	100	13	1-400-200-13	BRACKET, L	100
14	1-400-200-14	BRACKET, R	100	14	1-400-200-14	BRACKET, R	100

### 5-1-3. CABINET (R) BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	X-3943-921-1	CABINET (R) ASSY (TR82)		111	1-467-676-11	SWITCH BLOCK, CONTROL (CK)	
101	X-3943-926-1	CABINET (R) ASSY (TR72/TR80/TR430)				(TR42/TR82/TR550)	
101	X-3944-036-1	CABINET (R) ASSY (TR70)		111	1-467-676-21	SWITCH BLOCK, CONTROL (CK)	
101	X-3944-090-1	CABINET (R) ASSY (TR42)				(TR70/TR72/TR80/TR430)	
101	X-3944-110-1	CABINET (R) ASSY (TR550)		111	1-467-676-41	SWITCH BLOCK, CONTROL (CK) (TR400/TR750)	
101	X-3944-111-1	CABINET (R) ASSY (H) (TR400)		112	3-948-339-01	SCREW (BTP) (2X5), HEAD	
101	X-3944-113-1	CABINET (R) ASSY (H) (TR750)		* 113	3-958-586-01	LABEL, MODEL NUMBER (72) (TR72)	
102	3-718-233-01	NUT, PLATE		* 113	3-958-638-01	LABEL, MODEL NUMBER (82) (TR82)	
103	3-719-381-01	SCREW (M2X4)		* 113	3-958-973-01	LABEL, MODEL NUMBER (80) (TR80)	
104	3-719-601-01	SCREW (B2X5), TAPPING		* 113	3-958-974-01	LABEL, MODEL NUMBER (70) (TR70)	
105	3-949-008-01	SHEET, FOOT		* 113	3-959-117-01	LABEL, MODEL NUMBER (42) (TR42)	
106	3-958-618-01	BUTTON, BATTERY RELEASE		* 113	3-959-123-01	LABEL, MODEL NUMBER (550) (TR550)	
107	3-958-620-01	CLAW, BATTERY LOCK		* 113	3-959-124-01	LABEL, MODEL NUMBER (430) (TR430)	
108	3-426-508-00	SPRING, COMPRESSION		* 113	3-959-126-01	LABEL, MODEL NUMBER (400) (TR400)	
109	3-958-650-01	RETAINER, BATTERY RELEASE		* 113	3-959-129-01	LABEL, MODEL NUMBER (750) (TR750)	
110	1-810-535-11	DISPLAY PANEL, LIQUID CRYSTAL		* 114	3-959-615-01	CUSHION (CK)	
		(TR400/TR750)					

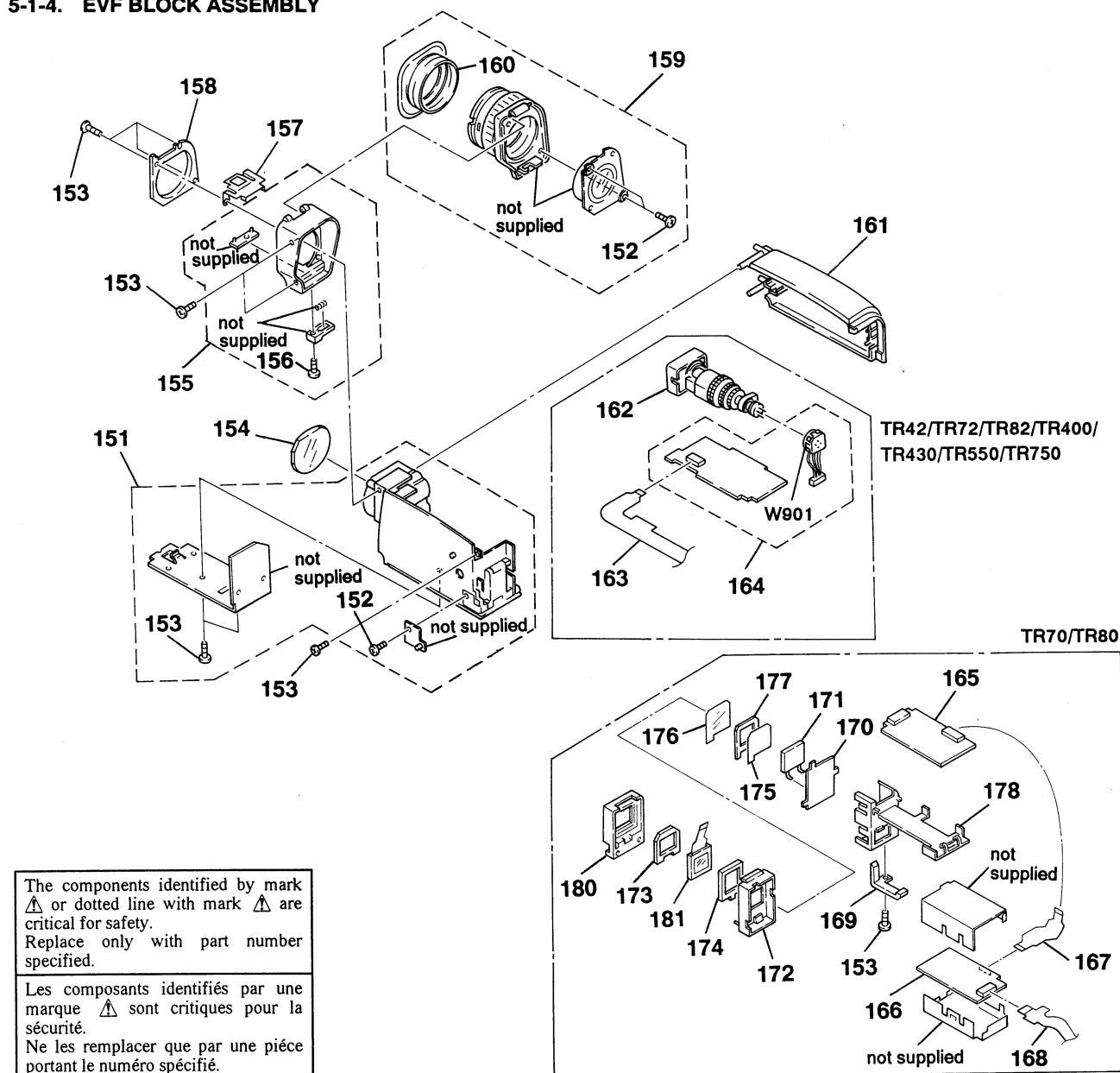
# 8-1-2. CABINET (X) BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Notes	Ref. No.	Part No.	Description	Notes
100	1-40-400-1	TOP COVER		101	1-40-400-1	TOP MOUNTING BRACKET	
101	1-40-400-2	TOP MOUNTING BRACKET		102	1-40-400-2	TOP MOUNTING PIN	
102	1-40-400-3	TOP MOUNTING PIN		103	1-40-400-3	TOP MOUNTING PIN	
103	1-40-400-4	TOP MOUNTING PIN		104	1-40-400-4	TOP MOUNTING PIN	
104	1-40-400-5	TOP MOUNTING PIN		105	1-40-400-5	TOP MOUNTING PIN	
105	1-40-400-6	TOP MOUNTING PIN		106	1-40-400-6	TOP MOUNTING PIN	
106	1-40-400-7	TOP MOUNTING PIN		107	1-40-400-7	TOP MOUNTING PIN	
107	1-40-400-8	TOP MOUNTING PIN		108	1-40-400-8	TOP MOUNTING PIN	
108	1-40-400-9	TOP MOUNTING PIN		109	1-40-400-9	TOP MOUNTING PIN	
109	1-40-400-10	TOP MOUNTING PIN		110	1-40-400-10	TOP MOUNTING PIN	
110	1-40-400-11	TOP MOUNTING PIN		111	1-40-400-11	TOP MOUNTING PIN	
111	1-40-400-12	TOP MOUNTING PIN		112	1-40-400-12	TOP MOUNTING PIN	
112	1-40-400-13	TOP MOUNTING PIN		113	1-40-400-13	TOP MOUNTING PIN	
113	1-40-400-14	TOP MOUNTING PIN		114	1-40-400-14	TOP MOUNTING PIN	
114	1-40-400-15	TOP MOUNTING PIN		115	1-40-400-15	TOP MOUNTING PIN	
115	1-40-400-16	TOP MOUNTING PIN		116	1-40-400-16	TOP MOUNTING PIN	
116	1-40-400-17	TOP MOUNTING PIN		117	1-40-400-17	TOP MOUNTING PIN	
117	1-40-400-18	TOP MOUNTING PIN		118	1-40-400-18	TOP MOUNTING PIN	
118	1-40-400-19	TOP MOUNTING PIN					



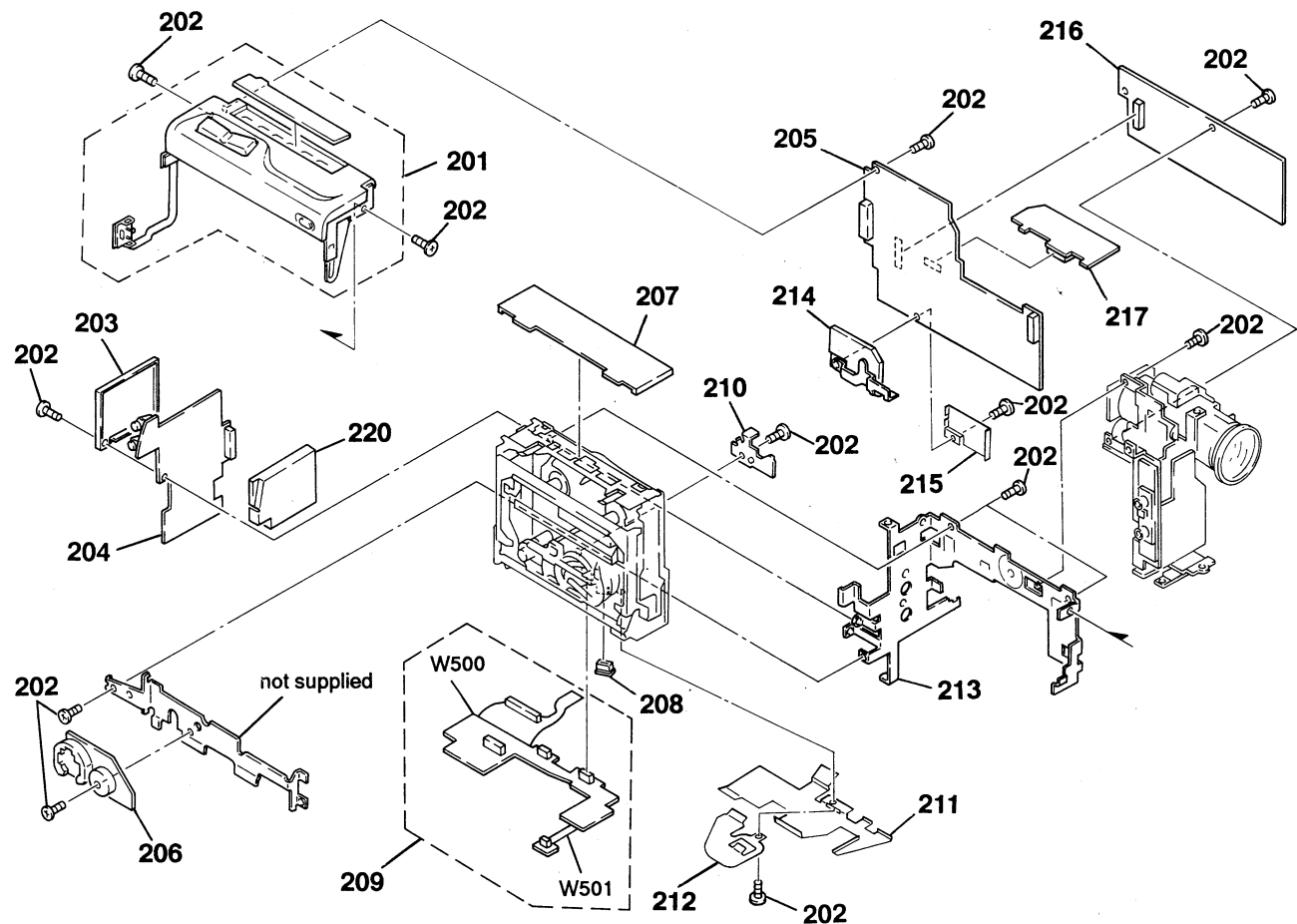
# 5-1-4. EVF BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	X-3943-930-1	CABINET (L) ASSY, EVF (TR42/TR72/TR82/TR400/TR430/TR550/TR750)		* 164	A-7063-957-A	VF-65 BOARD, COMPLETE (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
151	X-3944-004-1	CABINET (L) ASSY, EVF (TR70/TR80)		* 165	A-7066-011-A	VF-67 BOARD, COMPLETE (TR70/TR80)	
152	3-713-791-51	SCREW (M1.7X3.5), TAPPING, P2		* 166	A-7066-010-A	VF-66 BOARD, COMPLETE (TR70/TR80)	
153	3-948-339-01	SCREW (BTP)(2X5), HEAD		167	1-651-903-11	FP-92 FLEXIBLE BOARD (TR70/TR80)	
154	3-958-627-01	LENS (1), VF		168	1-651-893-11	FP-85 FLEXIBLE BOARD (TR70/TR80)	
155	A-7082-596-A	HOLDER (1) BLOCK ASSY, FINDER (TR42/TR72/TR82/TR400/TR430/TR550/TR750)		169	3-958-969-01	CHIP (LCD), TALLY (TR70/TR80)	
155	A-7082-625-A	HOLDER (1) BLOCK ASSY, FINDER (TR70/TR80)		* 170	A-7056-012-A	LB-35 BOARD, COMPLETE (TR70/TR80)	
156	3-958-217-01	SCREW (M2)		171	1-517-325-11	LAMP, FLUORESCENT (0.55 INCH) (TR70/TR80)	
157	3-958-629-01	SPRING, LEAF		172	3-958-962-01	COVER, BL (TR70/TR80)	
158	3-958-628-01	HOLDER (1), LENS		* 173	3-958-963-01	CUSHION (1) (TR70/TR80)	
159	A-7082-595-A	HOLDER (2) BLOCK ASSY, FINDER		* 174	3-958-964-01	CUSHION (2) (TR70/TR80)	
160	3-958-597-01	EYE CUP		175	3-958-965-01	PLATE, CONDENCE, BL (TR70/TR80)	
161	3-958-592-01	CABINET (R), EVF (TR42/TR72/TR82/TR400/TR430/TR550/TR750)		176	3-958-966-01	ILLUMINATOR, BL (TR70/TR80)	
161	3-958-592-11	CABINET (R), EVF (TR70/TR80)		* 177	3-958-967-01	CUSHION (3) (TR70/TR80)	
162	1-452-673-11	CRT ASSY (M01KXX90WB) (TR42/TR72/TR82/TR400/TR430/TR550/TR750)		178	3-958-968-01	HOLDER (TR70/TR80)	
163	1-651-894-11	FP-86 FLEXIBLE BOARD (TR42/TR72/TR82/TR400/TR430/TR550/TR750)		180	3-958-975-01	COVER, LCD (TR70/TR80)	
				181	8-753-015-00	LCX005AK-1 (TR70/TR80)	
				W901	1-540-019-21	SOCKET ASSY, CRT (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	

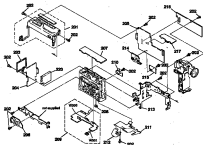


## 5-1-5. MAIN BOARDS ASSEMBLY



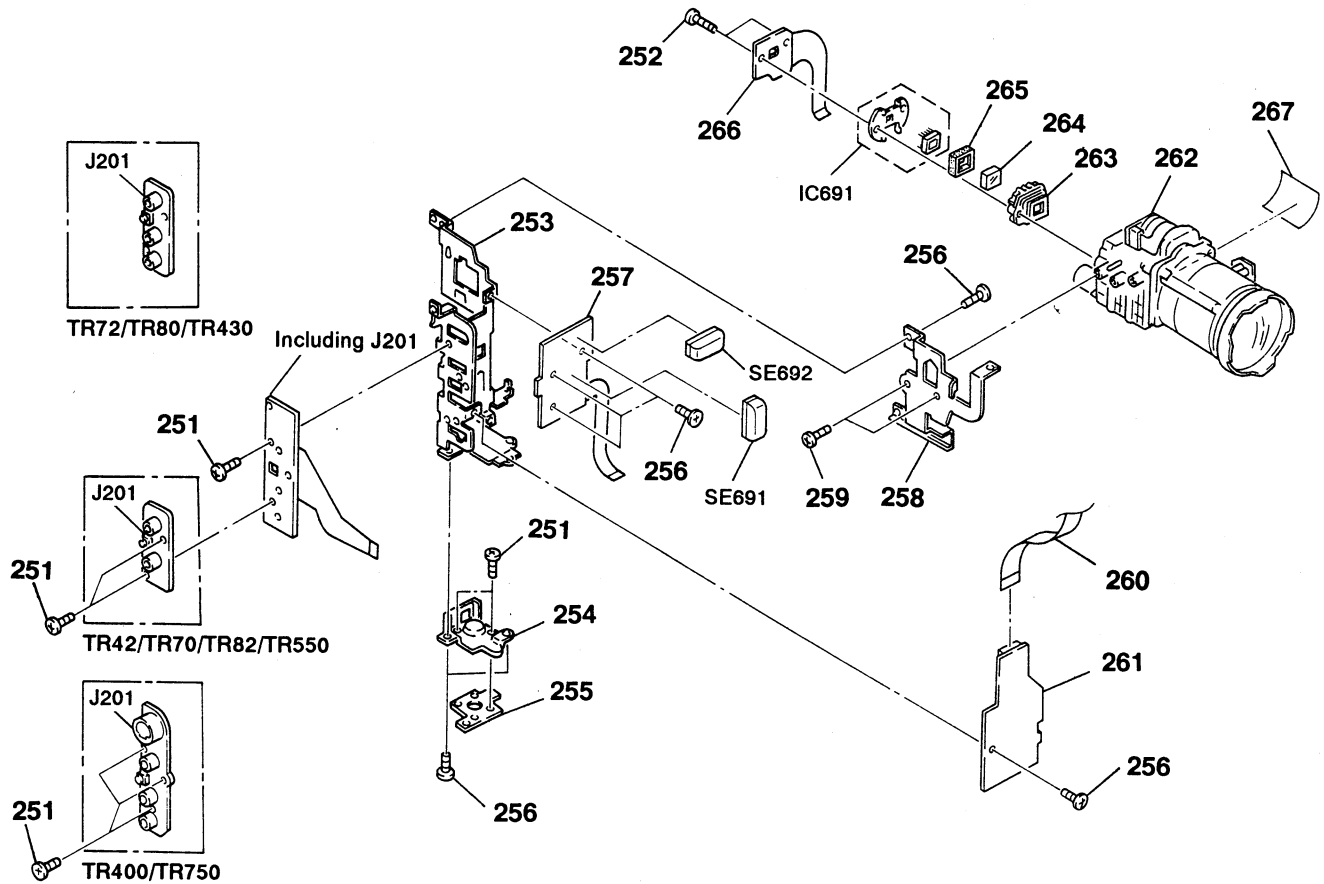
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	1-467-649-12	SWITCH BLOCK, CONTROL (FK) (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		* 209	A-7072-000-A	SL-38 BOARD, COMPLETE	
201	1-467-649-31	SWITCH BLOCK, CONTROL (FK) (TR400/TR750)		* 210	3-958-667-01	FRAME (B)	
202	3-713-786-21	SCREW (M2X3)		* 211	3-958-928-01	PLATE, SHIELD, RP	
* 203	3-958-925-01	CASE (MAIN), SHIELD, DD		212	1-651-891-11	FP-52 FLEXIBLE BOARD (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
* 204	A-7063-954-A	DD-66 BOARD, COMPLETE (TR42/TR82/TR550)		212	1-651-892-11	FP-53 FLEXIBLE BOARD (TR400/TR750)	
* 204	A-7063-960-A	DD-60 BOARD, COMPLETE (TR72/TR400/TR430/TR750)		* 213	3-958-345-01	FRAME (U)	
* 204	A-7066-006-A	DD-66 BOARD, COMPLETE (TR70)		* 214	X-3943-976-1	SHIELD (MAIN) ASSY, RP	
* 204	A-7066-009-A	DD-60 BOARD, COMPLETE (TR80)		* 215	3-958-924-01	CASE (LID), SHIELD, RP	
* 205	A-7063-953-A	VS-112 BOARD, COMPLETE (TR82)		* 216	A-7063-955-A	VC-145 BOARD, COMPLETE (TR82)	
* 205	A-7063-959-A	VS-104 BOARD, COMPLETE (TR72)		* 216	A-7063-961-A	VC-138 BOARD, COMPLETE (TR72/TR430)	
* 205	A-7066-008-A	VS-104 BOARD, COMPLETE (TR80)		* 216	A-7066-007-A	VC-145 BOARD, COMPLETE (TR70)	
* 205	A-7066-019-A	VS-112 BOARD, COMPLETE (TR70)		* 216	A-7066-018-A	VC-138 BOARD, COMPLETE (TR80)	
* 205	A-7066-047-A	VS-112 (LL) BOARD, COMPLETE (TR42)		* 216	A-7066-080-A	VC-138 BOARD, COMPLETE (TR400/TR750)	
* 205	A-7066-079-A	VS-104 (H) BOARD, COMPLETE (TR400)		* 216	A-7066-084-A	VC-145 BOARD, COMPLETE (TR42)	
* 205	A-7066-085-A	VS-112 BOARD, COMPLETE (TR550)		* 216	A-7066-088-A	VC-145 BOARD, COMPLETE (TR550)	
* 205	A-7066-086-A	VS-104 BOARD, COMPLETE (TR430)		217	A-7066-078-A	HE-14 BOARD, COMPLETE (TR400/TR750)	
* 205	A-7066-134-A	VS-104 (H) BOARD, COMPLETE (TR750)		220	X-3944-169-1	SHIELD (LID) ASSY, DD	
* 206	A-7072-002-A	ZB-2 BOARD, COMPLETE		W500	1-651-889-11	FP-48 (SL) FLEXIBLE BOARD	
207	3-958-341-01	COVER, LS		W501	1-642-186-11	FP-437 FLEXIBLE BOARD	
208	1-691-471-11	CONNECTOR, TRANSLATION 11P					

# 9-1-6. MAIN SLIDER ASSEMBLY



Part No.	Part No.	Description	Quantity	Part No.	Part No.	Description	Quantity
200	201	202	203	204	205	206	207
208	209	210	211	212	213	214	215
216	217	218	219	220	221	222	223
224	225	226	227	228	229	230	231
232	233	234	235	236	237	238	239
240	241	242	243	244	245	246	247
248	249	250	251	252	253	254	255
256	257	258	259	260	261	262	263
264	265	266	267	268	269	270	271
272	273	274	275	276	277	278	279
280	281	282	283	284	285	286	287
288	289	290	291	292	293	294	295
296	297	298	299	300			

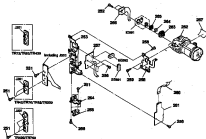
## 5-1-6. CCD BLOCK ASSEMBLY



Be sure to read "Note on the CCD Imager replacement" on page 4-6 when changing the CCD imager.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
251	3-719-381-01	SCREW (M2X4)		264	1-547-529-21	FILTER BLOCK, OPTICAL (TR82/TR400/TR550/TR750)	
252	3-947-268-01	SCREW (B TIGHT) (2), TAPPING		264	1-547-558-21	FILTER BLOCK, OPTICAL (TR42/TR70/TR72/TR80/TR430)	
* 253	3-958-587-01	FRAME (PJ)		265	3-946-857-01	RUBBER (S), SEAL	
254	3-958-310-11	HOLDER, TRIPOD		* 266	A-7072-004-A	FP-89 (CD) BOARD, COMPLETE (TR82/TR400/TR550/TR750)	
255	3-958-286-01	SHEET METAL, TRIPOD		* 266	A-7072-005-A	FP-89 (CD) BOARD, COMPLETE (TR42/TR70/TR72/TR80/TR430)	
256	3-713-786-21	SCREW (M2X3)		* 267	3-959-368-01	CUSHION, CABINET (R) (TR400/TR430/TR550/TR750)	
257	1-651-890-11	FP-49 FLEXIBLE BOARD (TR82/TR400/TR550/TR750)		J201	1-537-731-11	TERMINAL BOARD (TR42/TR70/TR82/TR550)	
* 258	3-958-666-01	FRAME (L)		J201	1-537-731-21	TERMINAL BOARD (TR72/TR80/TR430)	
259	3-948-339-01	SCREW (BTP) (2X5), HEAD		J201	1-537-731-31	TERMINAL BOARD (TR400/TR750)	
260	1-765-361-11	CABLE, FLAT (FFC-115) (TR72/TR80/TR400/TR430/TR750)		IC691	A-7030-368-A	CCD BLOCK ASSY (AUTO) (054 SERVICE) (CCD IMAGER) (TR42/TR70/TR72/TR80/TR430)	
260	1-765-362-11	CABLE, FLAT (FFC-134) (TR42/TR70/TR82/TR550)		IC691	A-7030-373-A	CCD BLOCK ASSY (AUTO) (059V SERVICE) (CCD IMAGER) (TR82/TR400/TR550/TR750)	
* 261	A-7063-952-A	AU-169 BOARD, COMPLETE (TR42/TR70/TR82/TR550)		SE691	1-810-024-31	SENSOR, ANGULAR VELOCITY (PITCH) (TR82/TR400/TR550/TR750)	
* 261	A-7063-958-A	AU-165 BOARD, COMPLETE (TR72/TR80/TR400/TR430/TR750)		SE692	1-810-024-41	SENSOR, ANGULAR VELOCITY (YAW) (TR82/TR400/TR550/TR750)	
262	1-547-716-11	LENS, ZOOM (VCL-5412WA) (TYPE II)					
262	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)					
263	3-946-856-01	ADAPTOR (H), CCD FITTING					

# 3-1-4. OGD BLOCK ASSEMBLY

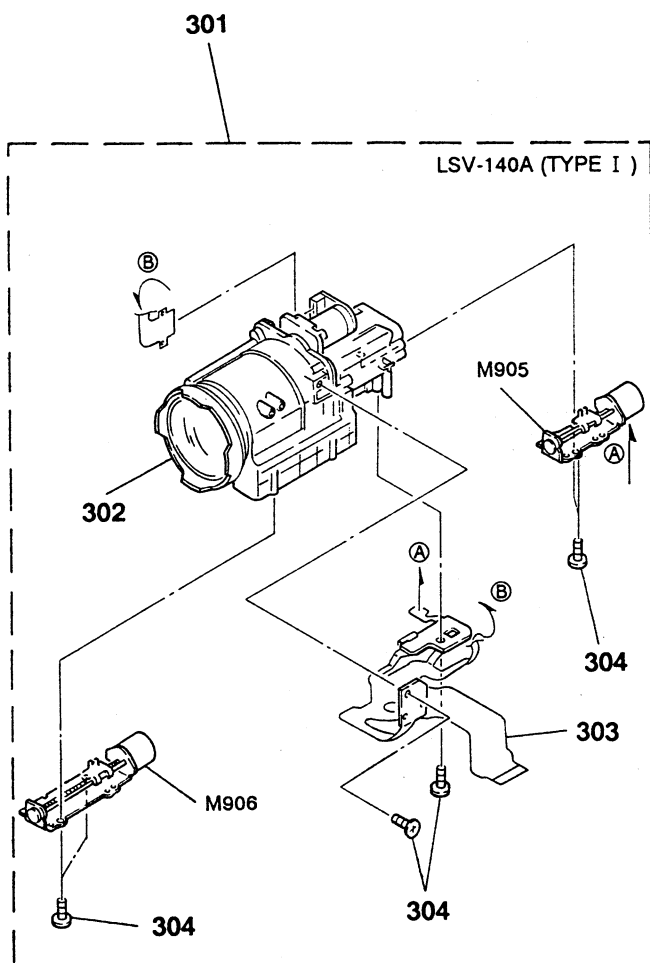


Be sure to read "Note on the OGD Image Alignment" on page 3-1 before changing the OGD image.

Ref. No.	Part No.	Description	Image
1	1-10-100-0	DATA TRANSFER	
2	1-10-100-0	DATA TRANSFER	
3	1-10-100-0	DATA TRANSFER	
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5	1-10-100-0	DATA TRANSFER	
6	1-10-100-0	DATA TRANSFER	
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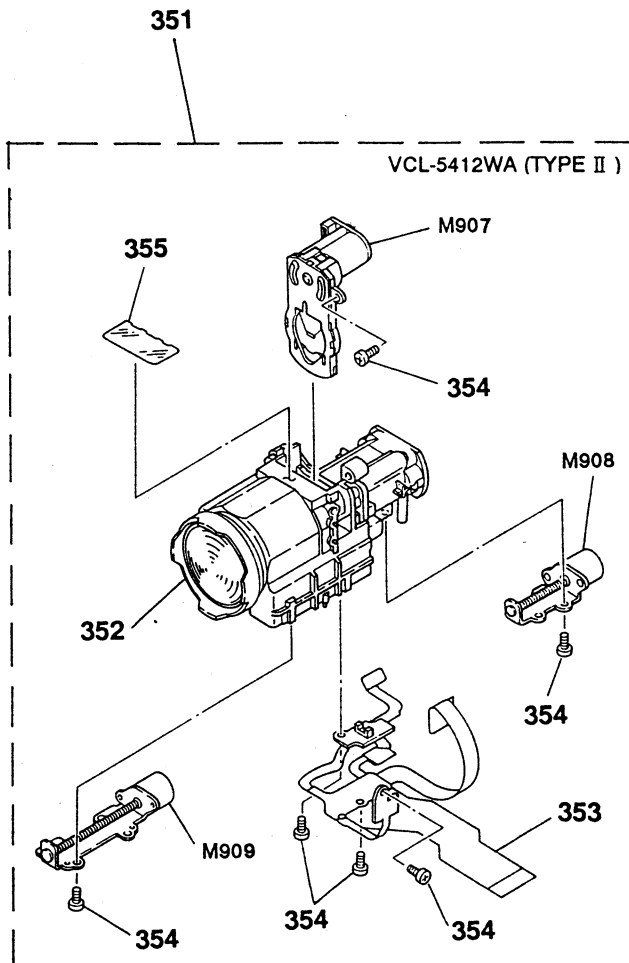
Ref. No.	Part No.	Description	Image
31	1-10-100-0	DATA TRANSFER	
32	1-10-100-0	DATA TRANSFER	
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35	1-10-100-0	DATA TRANSFER	
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59	1-10-100-0	DATA TRANSFER	
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# 5-1-7. ZOOM LENS ASSEMBLIES (LSV-140A) (VCL-5412WA)



TYPE I

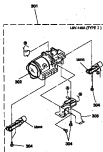
Ref. No.	Part No.	Description
301	8-848-704-01	DEVICE, LENS (LSV-140A) (TYPE I)
302	A-4910-598-A	DEVICE ASSY, LSV-140A (RP)
303	A-4915-338-A	FLEXIBLE, MOUNT
304	3-713-791-41	SCREW (M1.7X5), TAPPING, P2
M905	1-698-364-01	MOTOR ASSY, FOCUS
M906	1-698-363-01	MOTOR ASSY, ZOOM



TYPE II

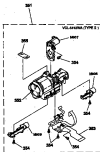
Ref. No.	Part No.	Description	Remark
351	1-547-716-11	LENS, ZOOM (VCL-5412WA) (TYPE II)	
352	3-708-891-01	DEVICE ASSY	
353	3-708-890-01	FLEXIBLE BOARD, MAIN	
354	3-708-302-01	SCREW (BT3 P1.7X4C)	
355	3-708-886-01	COVER, IG	
M907	3-708-888-01	METER, IG	
M908	3-708-889-01	MOTOR ASSY, FOCUS	
M909	3-708-887-01	MOTOR ASSY, ZOOM	

# 9-4-F. ENGINE LIGHT ASSEMBLIES (LAW-145A) (VCL-60-1000)



TYPE 1

Ref. No.	Part No.	Description	QTY
300	1-145-145-01	ENGINE LIGHT ASSEMBLY (TYPE 2)	1
301	1-145-145-02	LENS	1
302	1-145-145-03	MOUNTING BRACKET	1
303	1-145-145-04	SCREW	2
304	1-145-145-05	SCREW	2
305	1-145-145-06	SCREW	2
306	1-145-145-07	SCREW	2
307	1-145-145-08	SCREW	2

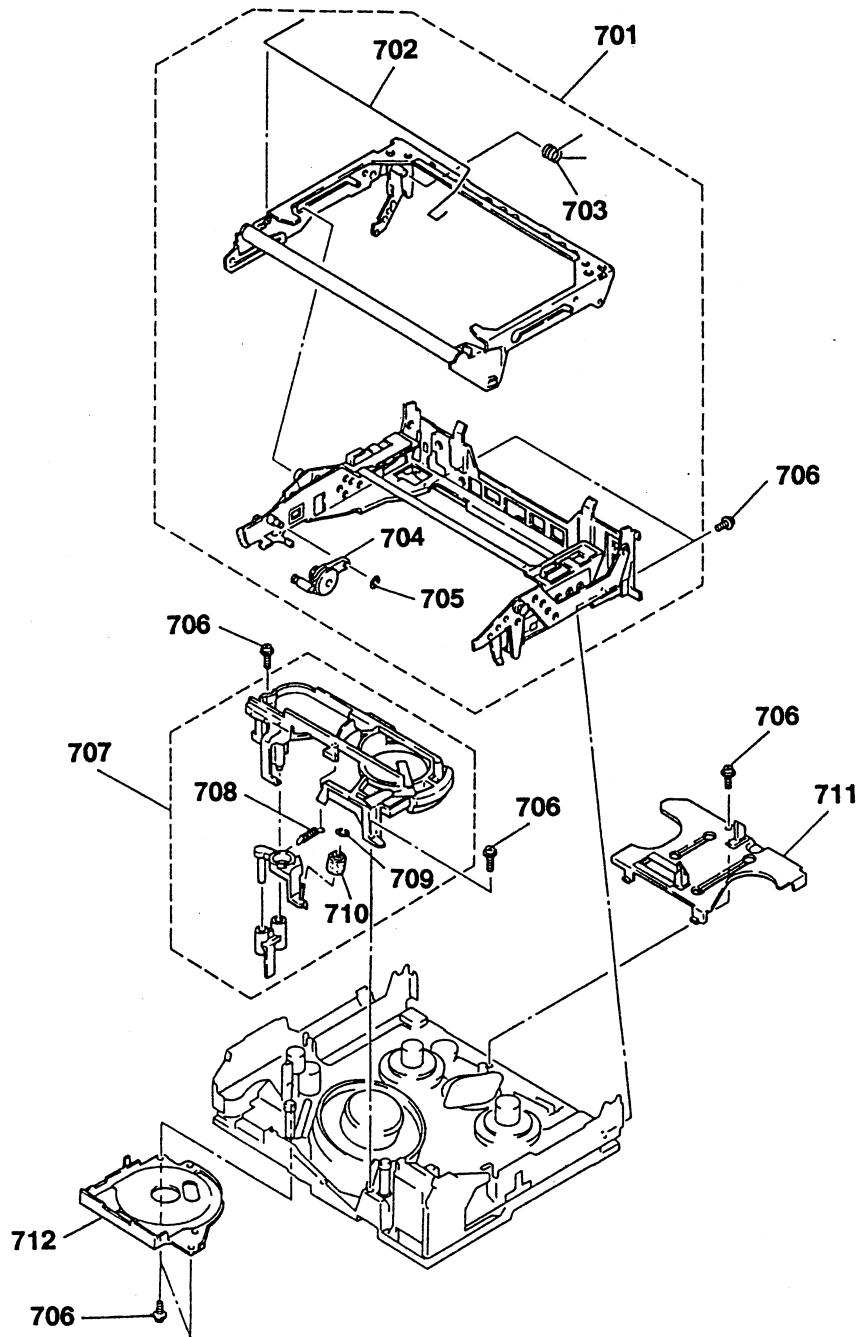


TYPE 2

Ref. No.	Part No.	Description	QTY
300	1-60-100-01	ENGINE LIGHT ASSEMBLY (TYPE 2)	1
301	1-60-100-02	LENS	1
302	1-60-100-03	MOUNTING BRACKET	1
303	1-60-100-04	SCREW	2
304	1-60-100-05	SCREW	2
305	1-60-100-06	SCREW	2
306	1-60-100-07	SCREW	2
307	1-60-100-08	SCREW	2
308	1-60-100-09	SCREW	2
309	1-60-100-10	SCREW	2
310	1-60-100-11	SCREW	2

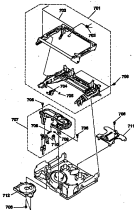


## 5-1-8. CASSETTE COMPARTMENT ASSEMBLY



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
701	A-7040-312-K	CASSETTE COMPARTMENT BLOCK ASSY		707	A-7040-309-A	PROTECT (BASE) BLOCK ASSY	
702	3-945-773-01	BAR, TORSION		708	3-945-760-01	SPRING, TENSION	
703	3-945-771-01	SPRING, TORSION		709	3-321-393-01	WASHER, STOPPER	
704	X-3941-287-2	DAMPER ASSY		710	X-3166-813-1	ROLLER ASSY, HC	
705	3-315-384-31	WASHER, STOPPER		711	X-3941-280-1	RETAINER ASSY, GOOSENECK	
706	3-947-503-01	SCREW (M1.4X2.5)		712	3-945-733-01	COVER, CAPSTAN	

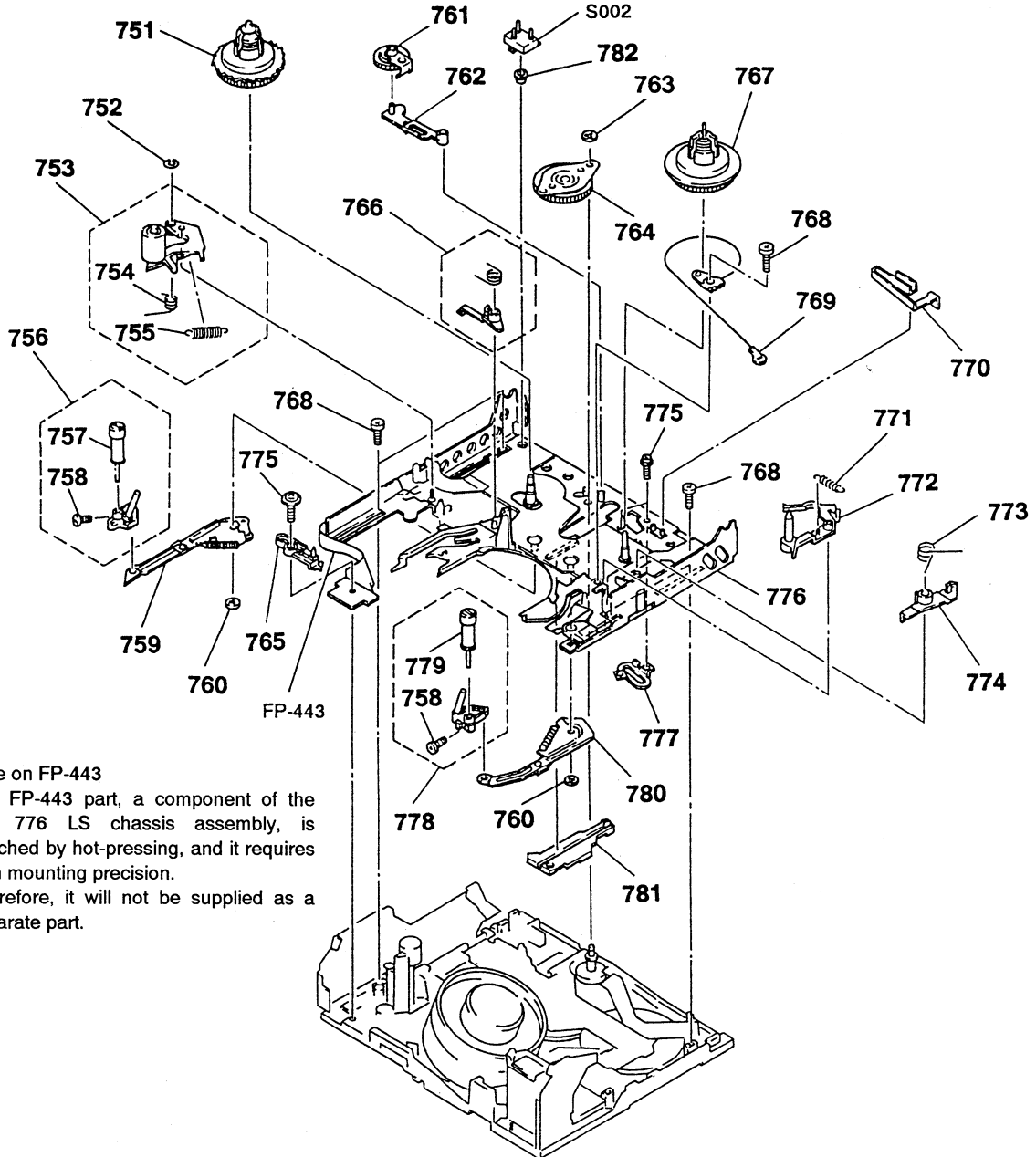
# 8-1-8. CASSETTE COMPARTMENT ASSEMBLY



Ref. No.	Doc. No.	Description	Mount
700	1-100-100-1	CASSETTE COMPARTMENT BASE ASSY	
701	1-100-100-2	CASSETTE COMPARTMENT COVER ASSY	
702	1-100-100-3	CASSETTE DECK	
703	1-100-100-4	CASSETTE DECK MOUNTING BRACKET	
704	1-100-100-5	CASSETTE DECK MOUNTING BRACKET	
705	1-100-100-6	CASSETTE DECK MOUNTING BRACKET	
706	1-100-100-7	CASSETTE DECK MOUNTING BRACKET	
707	1-100-100-8	CASSETTE DECK MOUNTING BRACKET	
708	1-100-100-9	CASSETTE DECK MOUNTING BRACKET	
709	1-100-100-10	CASSETTE DECK MOUNTING BRACKET	
710	1-100-100-11	CASSETTE DECK MOUNTING BRACKET	
711	1-100-100-12	CASSETTE DECK MOUNTING BRACKET	
712	1-100-100-13	CASSETTE DECK MOUNTING BRACKET	

Ref. No.	Doc. No.	Description	Mount
700	1-100-100-1	CASSETTE COMPARTMENT BASE ASSY	
701	1-100-100-2	CASSETTE COMPARTMENT COVER ASSY	
702	1-100-100-3	CASSETTE DECK	
703	1-100-100-4	CASSETTE DECK MOUNTING BRACKET	
704	1-100-100-5	CASSETTE DECK MOUNTING BRACKET	
705	1-100-100-6	CASSETTE DECK MOUNTING BRACKET	
706	1-100-100-7	CASSETTE DECK MOUNTING BRACKET	
707	1-100-100-8	CASSETTE DECK MOUNTING BRACKET	
708	1-100-100-9	CASSETTE DECK MOUNTING BRACKET	
709	1-100-100-10	CASSETTE DECK MOUNTING BRACKET	
710	1-100-100-11	CASSETTE DECK MOUNTING BRACKET	
711	1-100-100-12	CASSETTE DECK MOUNTING BRACKET	
712	1-100-100-13	CASSETTE DECK MOUNTING BRACKET	

# 5-1-9. LS CHASSIS ASSEMBLY



## Note on FP-443

The FP-443 part, a component of the No. 776 LS chassis assembly, is attached by hot-pressing, and it requires high mounting precision. Therefore, it will not be supplied as a separate part.

Ref.No. Part No. Description

751	X-3941-274-1	TABLE ASSY, REEL, T
752	3-331-007-21	WASHER
753	X-3941-271-5	ARM ASSY, PINCH
754	3-945-743-01	SPRING, TORSION
755	3-945-783-01	SPRING, TENSION
756	A-7040-307-A	GUIDE (BASE) (T) BLOCK ASSY
757	X-3941-424-1	ROLLER ASSY, TG6
758	3-947-504-01	SCREW (M1.2X2)
759	X-3941-267-1	ARM (T) ASSY, GUIDE
760	3-669-465-00	WASHER (1.5), STOPPER
761	X-3941-273-1	SOFT ASSY, T
762	3-945-753-01	ARM, T SOFT
763	3-726-829-01	WASHER, STOPPER
764	X-3941-279-5	GEAR ASSY, GOOSENECK
765	3-947-644-01	RETAINER, TG5 (BASE)
766	A-7040-321-A	CLAW BLOCK ASSY, T HARD
767	X-3943-676-1	TABLE ASSY, S REEL

Remark

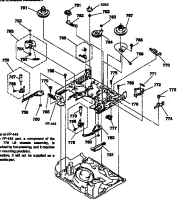
Ref.No. Part No. Description

768	3-945-756-01	SCREW (M1.4X3)
769	X-3941-277-1	STRING BLOCK ASSY
770	3-945-801-01	BRAKE, S SOFT
771	3-954-327-01	SPRING, TENSION
772	X-3941-276-1	TG1 ASSY
773	3-945-752-01	SPRING, TORSION
774	3-945-799-01	BRAKE, S HARD
775	3-947-503-01	SCREW (M1.4X2.5)
776	X-3943-307-1	CHASSIS ASSY, LS
777	3-945-784-01	PLATE, CAM, LS
778	A-7040-306-A	GUIDE (BASE) (S) BLOCK ASSY
779	X-3941-269-1	ROLLER ASSY, TG3
780	X-3941-266-1	ARM (S) ASSY, GUIDE

781	3-945-837-01	SLIDER, GL
782	3-949-881-01	SLEEVE
S002	1-572-987-11	SWITCH, PUSH (3 KEY)

(REC PROOF, ME/MP, MP/MP-HG)

11. **QUESTION** The following table shows the number of people who attended the 2004 Summer Olympics in Athens, Greece, by country. The data are in millions of people.



1000

The PP-443 part, a component of the No. 100 L&L chassis assembly, is affecting tape processing and tape drive high mounting problems.

[illegible]

# SECTION 6

## INTERFACES • IC PIN

### 6-1. CAMERA CONTROL MICRO PROCESSOR PIN FUNCTION (VC BOARD IC602: SC424608 MC68HC11MA8FU)

Pin No.	Signal Name	I/O	Function
1	VTR SI	I	Serial data input from mode control microprocessor (VS board IC503).
2	VTR SCK	I	Serial data transfer clock from/to mode control microprocessor.
3	CAM CS	I	Chip select signal from mode control microprocessor.
4			Not used.
5			
6			
7			
8			
9	PBV	I	V sync signal from servo/mechanism control microprocessor (VS board IC505).
10			Not used (connected to +3.6V).
11			
12	VDD		+3.6V power supply.
13	VSS		GND
14	CS TG	O	Chip select signal to timing generator (IC702).
15			Not used (connected to +3.6V).
16	START	O	Operation signal of IC705. Normally "L". "H" during operation.
17	WEN	I	Write enable signal from timing generator (IC702). Normally "H".
18			Not used.
19	CS VST	O	Chip select signal to steady shot control microprocessor (IC777).
20	CS CORE	O	Chip select signal to camera core (IC609).
21	EEPROM BUSY	I	BUSY signal from EEPROM (IC601). Normally "H". "L" during data read/write.
22			Not used.
23	IRIS PWM	O	Iris control signal.
24			Not used.
25			
26	TESTX	O	Test signal of IC705. "H": Camera mode, "L": Test/VTR mode.
27	LENS RST LED	O	Lens reset sensor LED ON/OFF. "H": ON, "L": OFF.
28	FC RST	I	Lens focus reset sensor signal input.
29	ZM RST	I	Lens zoom reset sensor signal input.
30	XIRQ		Connected to +3.6V.
31	VDD		+3.6V power supply.
32	VSS		GND
33			Not used.
34			
35			
36	CAM SCK	O	Serial data transfer clock.
37	CAM SO	O	Serial data output.
38	CAM SI	I	Serial data input.
39			Not used.
40			

Pin No.	Signal Name	I/O	Function
41	VDD		+3.6V power supply.
42	GENERAL A/D	I	Camera core (IC609) discrimination signal input.
43	LENS TYPE	I	Lens type discrimination signal input.
44	ZOOM SW	I	Zoom key signal input. When not pressed: 1.8V, TELE 1: 2.7V, TELE 2: 3.6V, WIDE 1: 0.9V, WIDE 2: 0V.
45	MAN FOCUS (2)	I	Manual focus dial signal (2) input. 0V to 3.4V depending on the dial turning.
46	MAN FOCUS (1)	I	Manual focus dial signal (1) input. 0V to 3.4V depending on the dial turning.
47			Not used. Connected to GND.
48			
49	HALL A/D	I	Hall voltage. Approx. 1V (iris opened) to approx. 3.5V (iris closed).
50	VRL	I	Connected to GND.
51	VRH	I	Connected to +3.6V.
52	VSS		GND
53	CS EEPROM	O	Chip select signal to EEPROM (IC601).
54	CS CAM OPD	O	Chip select signal to OPD (IC611).
55	D/A STB	O	Strobe signal to camera EVR (IC603).
56	EEPROM RESET	O	EEPROM (IC601) write disable signal. Normally "H".
57	CS AF OPD	O	Chip select signal to AF OPD (IC611).
58	CS PDR	O	Chip select signal to pre-driver (IC753).
59	CAM ON	O	A/D converter (IC704) ON/OFF signal. Normally "H".
60	NTSC	O	"L": NTSC, "H": PAL.
61	IRQ	I	Connected to +3.6V.
62			Not used.
63			
64	PDR RST	O	Reset signal to zoom/focus pre-driver (IC753). "H": Camera mode, "L": VTR mode.
65	NRML/VST	O	"H": Steady shot operation, "L": Normal operation.
66	VST/CORE RST	O	Reset signal to steady shot control microprocessor (IC777) and camera core (IC609). Normally "H". "L": Reset.
67	OPD RST	O	Reset signal to IC611 and IC705. "H": Camera mode, "L": VTR mode.
68			Not used. Connected to GND.
69			
70	VSS		GND
71	VDD		+3.6V power supply.
72			Not used.
73	EXTAL	I	24 MHz clock oscillation circuit.
74	XTAL	O	
75	RESET	I	Reset signal from mode control microprocessor (VS board IC503). Normally "H". "L": Reset.
76	MODB		Connected to +3.6V.
77	MODA		Connected to GND.
78	RXD		Not used.
79	TXD		
80	VTR SO	O	Serial data output to mode control microprocessor (VS board IC503).

SECTION 8  
INTERFACES - IC PIN

8-1. CAMERA CONTROL, VIDEO PROCESSOR AND FUNCTION  
(IC BOARD (E800) BOARD (E800C11) BOARD)

IC BOARD (E800)		IC BOARD (E800C11)		IC BOARD (E800C11)	
Pin	Signal	Pin	Signal	Pin	Signal
1	VCC	1	VCC	1	VCC
2	GND	2	GND	2	GND
3	NC	3	NC	3	NC
4	NC	4	NC	4	NC
5	NC	5	NC	5	NC
6	NC	6	NC	6	NC
7	NC	7	NC	7	NC
8	NC	8	NC	8	NC
9	NC	9	NC	9	NC
10	NC	10	NC	10	NC
11	NC	11	NC	11	NC
12	NC	12	NC	12	NC
13	NC	13	NC	13	NC
14	NC	14	NC	14	NC
15	NC	15	NC	15	NC
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36	NC	36	NC	36	NC
37	NC	37	NC	37	NC
38	NC	38	NC	38	NC
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41	NC	41	NC	41	NC
42	NC	42	NC	42	NC
43	NC	43	NC	43	NC
44	NC	44	NC	44	NC
45	NC	45	NC	45	NC
46	NC	46	NC	46	NC
47	NC	47	NC	47	NC
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49	NC	49	NC	49	NC
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90	NC	90	NC	90	NC
91	NC	91	NC	91	NC
92	NC	92	NC	92	NC
93	NC	93	NC	93	NC
94	NC	94	NC	94	NC
95	NC	95	NC	95	NC
96	NC	96	NC	96	NC
97	NC	97	NC	97	NC
98	NC	98	NC	98	NC
99	NC	99	NC	99	NC
100	NC	100	NC	100	NC

## 6-2. STEADY SHOT CONTROL MICRO PROCESSOR PIN FUNCTION (VC BOARD IC777: CXP87132-010R) (CCD-TR82/TR400/TR550/TR750)

Pin No.	Signal Name	I/O	Function
1	MPX	O	Not used.
2	ADC STBY	O	Standby output to A/D converter (IC776). Normally "H".
3	C RESET	O	Reset signal to PITCH/YAW sensor amplifier (IC772 to IC774) in initializing. Normally "L".
4	PB0/PO08	O	
5	PC7/RT07	O	
6	PC6/RT06	O	
7	PC5/RT05	O	
8	PC4/RT04	O	
9	PC3/RT03	O	
10	PC2/PO018	O	
11	PC1/PO017	O	
12	PC0/PO016	O	
13	PJ7	O	
14	PJ6	O	
15	PJ5	O	
16	PJ4	O	
17	PJ3	O	
18	PJ2	O	
19	PJ1	O	
20	PJ0	O	
21	PD7	O	
22	PD6	O	
23	PD5	O	
24	PD4	O	
25	PD3	O	
26	PD2	O	
27	PD1	O	
28	PD0	O	
29	PH7	O	
30	PH6	O	
31	PH5	O	
32	PH4	O	
33	PH3	O	
34	PH2	O	
35	PH1	O	
36	PH0	O	
37	MP	I	Connected to GND.
38	VST RST	I	Reset signal from camera microprocessor (IC602). Normally "H".
39	VSS		GND. Connected to GND.
40	XTAL	O	Connected to 12 MHz crystal oscillator.

Pin No.	Signal Name	I/O	Function
41	EXTAL	I	Connected to 12 MHz crystal oscillator.
42	CS VISTA MICOM	I	Chip select signal from camera microprocessor (IC602).
43	S IN	I	Serial data input from camera microprocessor (IC602).
44	S OUT	O	Serial data output to camera microprocessor (IC602).
45	CAM SCK	I	Serial data transfer clock from/to camera microprocessor (IC602).
46	PF7/AN11	O	Not used.
47	PF6/AN10	O	
48	PF5/AN9	O	
49	PF4/AN8	O	
50	AVSS		A/D port GND. Connected to GND.
51	AVREF	I	A/D port reference voltage input. Connected to +3.6V.
52	AVDD		A/D port positive power supply. Connected to +3.6V.
53	PF3/AN7	I	Not used. Connected to +3.6V.
54	PF2/AN6	I	
55	PF1/AN5	I	
56	PF0/AN4	I	
57	AN3	I	
58	AN2	I	
59	AN1	I	
60	AN0	I	
61	PG7/EX11	I	Not used. Connected to GND.
62	CGV	I	V SYNC from sync generator (IC610).
63	FLD	I	FLD signal from sync generator (IC610).
64	PG4/SYNC0	I	Not used. Connected to GND.
65	PG3/PBCTL	I	
66	PG2/DPG	I	
67	PG1/DFG	I	
68	PG0/CRG	I	Not used.
69	PE7/DAB1	O	
70	PE6/DAB0	O	
71	PE5/DAA1	O	
72	PE4/DAA0	O	Not used. Connected to +3.6V.
73	PE3/PWM1	O	
74	PE2/PWM0	O	
75	PE1/INT2	I	
76	PE0/INT0	I	Serial data input.
77	VST SI	I	
78	VST SO	O	Serial data output.
79	VST SCK	O	Serial data transfer clock.
80	PI4/INT1	O	Not used.

6-2. STEADY SHOT CONTROL, MISSILE INSPECTION, REM FLECTION  
(NO BOARDING, NOVT, CAPN-10-1110) (CIC-1110-1110-1110-1110)

Time		Remarks	
01	01	01	01
02	02	02	02
03	03	03	03
04	04	04	04
05	05	05	05
06	06	06	06
07	07	07	07
08	08	08	08
09	09	09	09
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
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65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
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79	79	79	79
80	80	80	80
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82	82	82	82
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86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

Time		Remarks	
01	01	01	01
02	02	02	02
03	03	03	03
04	04	04	04
05	05	05	05
06	06	06	06
07	07	07	07
08	08	08	08
09	09	09	09
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
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**6-3. CAMERA CORE PIN FUNCTION**  
**(VC BOARD IC609: CXD2150R) (TR42/TR70/TR72/TR80/TR82/TR430)**  
**(VC BOARD IC609: CXD2150AR) (TR400/TR550/TR750)**

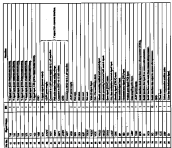
Pin No.	Signal Name	I/O	Function
81	P13/T0	O	Not used.
82	P12/PWM	O	
83	P11/P0	O	
84	P10/PCK	I	Not used. Connected to +3.6V.
85	PKO	I	
86	GND		GND
87	VDD		+3.6V power supply.
88	VPP		Connected to +3.6V.
89	(CS_DISP)	O	Not used.
90	PA6/PPO6	O	
91	/CS_ADC	O	Chip select signal to A/D converter (IC776).
92	/CS_ZTG	O	Chip select signal to timing generator (IC702).
93	/CS_ZVST	O	Chip select signal to IC613.
94	PA2/PPO2	O	Not used.
95	PA1/PPO1	O	
96	PA0/PPO0	O	
97	PB7/PPO15	O	
98	PB6/PPO14	O	
99	PB5/PPO13	O	
100	PB4/PPO12	O	

Pin No.	Signal Name	I/O	Function
1	OPD6	O	OPD (IC611) data output.
2	OPD5	O	OPD data output.
3	OPD4	O	OPD data output.
4	OPD3	O	OPD data output.
5	OPD2	O	OPD data output.
6	OPD1	O	OPD data output.
7	OPD0	O	OPD data output, LSB.
8	OPDID	O	OPD line discrimination signal.
9	VDD	—	Power supply (+3.6V).
10	CO3	O	C signal output, MSB (CCD-TR82/TR400/TR550).
11	CO2	O	C signal output (CCD-TR82/TR400/TR550).
12	CO1	O	C signal output (CCD-TR82/TR400/TR550).
13	CO0	O	C signal output, LSB (CCD-TR82/TR400/TR550).
14	VSS	—	GND
15	CI3	I	C signal input, MSB (CCD-TR82/TR400/TR550).
16	CI2	I	C signal input (CCD-TR82/TR400/TR550).
17	CI1	I	C signal input (CCD-TR82/TR400/TR550).
18	CI0	I	C signal input, LSB (CCD-TR82/TR400/TR550).
19	NRB	O	C signal. Color discrimination signal.
20	VDD	—	+3.6V power supply.
21	VBC		Connected to GND via 0.1 $\mu$ F capacitor.
22	AVSC		GND
23	IREFC		Connected to GND via 12 k $\Omega$ resistor.
24	VREFC	I	Full scale output value setting voltage.
25	VGC		Connected to +3.6V power supply via 0.1 $\mu$ F capacitor.
26	AVDC		+3.6V power supply.
27	IOC	O	Chroma signal output (Current output).
28	VDD	—	Y I/F power supply (+3.6V).
29	DICK	O	Memory interface reference clock (CCD-TR82/TR400/TR550).
30	CDIS	O	Digital output (chroma) color discrimination signal (CCD-TR82/TR400/TR550).
31	YO7	O	Y signal output, MSB (CCD-TR82/TR400/TR550).
32	YO6	O	Y signal output (CCD-TR82/TR400/TR550).
33	YO5	O	Y signal output (CCD-TR82/TR400/TR550).
34	YO4	O	Y signal output (CCD-TR82/TR400/TR550).
35	YO3	O	Y signal output (CCD-TR82/TR400/TR550).
36	YO2	O	Y signal output (CCD-TR82/TR400/TR550).
37	YO1	O	Y signal output (CCD-TR82/TR400/TR550).
38	YO0	O	Y signal output, LSB (CCD-TR82/TR400/TR550).
39	DATS	I	DA test pin. (Normally fixed at "L".)
40	Y17	I	Y signal input, MSB (CCD-TR82/TR400/TR550).



Pin No.	Signal Name	I/O	Function
41	Y16	I	Y signal input (CCD-TR82/TR400/TR350).
42	Y15	I	Y signal input (CCD-TR82/TR400/TR350).
43	Y14	I	Y signal input (CCD-TR82/TR400/TR350).
44	Y13	I	Y signal input (CCD-TR82/TR400/TR350).
45	Y12	I	Y signal input (CCD-TR82/TR400/TR350).
46	Y11	I	Y signal input (CCD-TR82/TR400/TR350).
47	Y10	I	Y signal input, LSB (CCD-TR82/TR400/TR350).
48	VSS	—	GND
49	IOY	O	Y signal output (current output).
50	AVDY		+3.6V power supply.
51	VGX		Connected to +3.6V power supply via 0.1 $\mu$ F capacitor.
52	VRFX	I	Full scale output value setting voltage.
53	IRFY		Connected to GND via 12 k $\Omega$ resistor.
54	AVSY		GND
55	VBY		Connected to GND via 0.1 $\mu$ F capacitor.
56	VDD	—	+3.6V power supply
57	BIN	I	Not used.
58	GIN	I	Not used.
59	RIN	I	Not used.
60	TIKEY	I	Not used.
61	WKEY	I	Wide ID signal input.
62	VCK	I	PAL 4 fsc modulation clock.
63	VHLD	I	Mosaic processing horizontal hold control signal.
64	HHL	I	Mosaic processing horizontal hold control signal.
65	CSYN	I	Sync signal (SYNC) input.
66	LALT	I	PAL line modulation inverted signal input.
67	CBK	I	Blanking signal (CBLK) input.
68	BF	I	Burst added signal input.
69	HD	I	Horizontal sync signal (HD) input.
70	VD	I	Vertical sync signal (VD) input.
71	AJST	I	Data sampling pulse input.
72	VDD	—	+3.6V power supply.
73	SCK	I	Serial interface clock input from camera microprocessor (IC602).
74	SI	I	Serial interface data input from camera microprocessor.
75	XCE	I	Serial interface enable input from camera microprocessor.
76	SO	O	Serial interface data output to camera microprocessor.
77	VSS	—	GND
78	CLK	I	Clock input.
79	DEF	I	Defect compensation position pulse.
80	ID	I	Color line discrimination signal.

Pin No.	Signal Name	I/O	Function
81	MCK	I	Main clock input.
82	VDD	—	+3.6V power supply.
83	XCLR	I	All clear input.
84	VDD	—	AD I/F power supply (+3.6V).
85	ADCK	O	AD converter clock output. Not used.
86	VSS	—	GND
87	AD0	I	AD data input from A/D converter (IC704), MSB.
88	AD1	I	AD data input from A/D converter.
89	AD2	I	AD data input from A/D converter.
90	AD3	I	AD data input from A/D converter.
91	AD4	I	AD data input from A/D converter.
92	AD5	I	AD data input from A/D converter.
93	AD6	I	AD data input from A/D converter.
94	AD7	I	AD data input from A/D converter.
95	AD8	I	AD data input from A/D converter.
96	AD9	I	AD data input from A/D converter, LSB.
97	VDD	—	+3.6V power supply.
98	OPD9	O	OPD (IC611) data output, MSB.
99	OPD8	O	OPD data output.
100	OPD7	O	OPD data output.



## 6-4. MECHANISM CONTROL MICRO PROCESSOR PIN FUNCTION (VS BOARD IC505: CXP87132-009R)

Note 1: CCD-TR72/TR80/TR400/TR430/TR750

Note 2: CCD-TR400

Pin No.

Signal Name

I/O

Function

1

RP PB MODE

O

REC/PB switching signal of REC/PB amplifier (VS board IC102) and ATF servo IC (VS board IC508). "H": PB.

2

FE ON

O

Flying erase oscillation on/off control signal. "L": Oscillation.

3

JOG VD

O

False VD signal inserted in playback video signal during variable speed playback.

4

JOG

O

Variable speed playback/normal playback switching signal of video circuit.  
"H": Variable speed playback.

5

S JACK IN

I

(Note 2)

6

PB 1.7M DET

I

AFM stereo tape/monaural tape discrimination input.  
"H": During stereo or bilingual tape playback. (Note 1)

7

JACK MON/ST DET

I

Monaural/stereo discrimination input of audio input/output terminal.  
"L": When jack is inserted in right channel terminal. (Note 1)

8

INT VD

O

Internal VD signal.

9

SYSTEM SYNC (PBV)

O

System synchronizing signal.

10

SYNC DET

O

Sync detect output. "L" when sync is detect.

11

E/L DET

I

Normal/Hi8 discrimination input. "H" when Hi8 tape playback. (Note 2)

12

MIC MONO

I

External microphone monaural/stereo discrimination input.  
"L": When monaural microphone is used. (Note 1)

13

MODE SW 0

I

BL	END	EJECT	USE	LOAD	READY	TURN	REC/PB	FF
M SW 0	H	L	L	H	L	H	H	L
M SW 1	H	H	L	L	L	L	H	H
M SW 2	H	H	H	H	H	L	L	L

14

MODE SW 1

I

Mode switch input.

15

MODE SW 2

I

M SW 2	H	H	H	H	H	L	L	L
--------	---	---	---	---	---	---	---	---

16

CC DOWN SW

I

Cassette compartment down switch input. "L": down

17

REC PROOF SW

I

Recording-proof switch input. "H": REC prohibition.

18

ME/MP SW

I

ME/MP switch input. "L": MP, "H": ME.

19

Hi8 MP SW

I

Hi8 MP switch input. "H": Hi8 MP, "L": Normal MP or ME.

20

LM LIM ON

O

Loading motor limiter on detection signal. Normally "H": "L" when limiter is on.

21

LINE MIX

O

Audio stereo/monaural control signal. (Note 1)

22

MX SEL 1

O

When recording: Monaural/stereo switching signal.  
When playing back: Monaural/stereo/bilingual switching signal.

23

MX SEL 2

O

Monaural	Stereo	Stereo	Main	Sub	Monaural
MX SEL 1	L	L	L	H	L
MX SEL 2	H	L	H	L	H

  
(Note 1)

24

MX ON/OFF

O

Matrix on/off signal. "H": Matrix on (stereo recording/playback) (Note 1)

25

COMP REC

O

Video input/S video input switching signal. "H": Video input.

26

CAM/LINE

O

Camera input/line input switching signal. "H": Camera input.

27

WIND

O

"L": Wind sound decrease on. (Note 1)

28

N.C.

Not used.

29

UNLOAD

O

Loading motor control signal. When unloading: "H" or "H" pulse.

30

LOAD

O

Loading motor control signal. When loading: "H" or "H" pulse.

Pin No.	Signal Name	I/O	Function
31	LM LIM CONT	O	Loading motor limiter control signal. Momentarily "H" when loading.
32	DRUM ON	O	Drum motor on/off signal. "H" (Approx. 1.3V): Drum on.
33	DRUM RVS	O	Drum rotation direction control signal. Normally "L".
34	N.C.		Not used. (open)
35	EDIT	O	Video circuit normal/EDIT switching signal. "L": When edit of menu display is at "ON".
36	EL OUT	O	Video circuit normal/Hi8 switching signal. "H": Hi8 mode. (Note 2)
37	MP		Connected to GND.
38	RESET	I	Reset signal from mode control micro processor (VS board IC503). When reset: "L".
39	VSS		GND
40	XTAL	O	11.89 MHz clock oscillation circuit.
41	EXTAL	I	
42	MECHA CONCS	I	Chip select signal from mode control micro processor (VS board IC503).
43	DATA TO SLAVE	I	Serial data input from mode control micro processor.
44	DATA TO MASTER	O	Serial data output to mode control micro processor.
45	MODECON SCK	I	Serial clock input from mode control micro processor.
46	AUDIO MUTE	O	Audio output mute signal. "H": Mute.
47	VIDEO MUTE	O	Video output mute signal. "H": Mute.
48	MONO REC (1.7M ON/OFF)	O	Monaural/stereo recording switching signal. "H": During monaural recording (1.7 MHz REC AFM carrier off). (Note 1)
49	N.C.		
50	AVSS		A/D converter system GND.
51	AVREF		A/D converter system reference voltage. Connected to SS3.6V.
52	AVDD		A/D converter system power supply. Connected to SS3.6V.
53	EXT MIC	I	External microphone discrimination input. Not used.
54	END SENS	I	Tape end detection signal. Normally: "L", "H" pulse at tape end.
55	TOP SENS	I	Tape top detection signal. Normally: "L", "H" pulse at tape top.
56	DEW DET	I	Condensation detection signal. "L" when condensation present.
57	N.C.		Not used. Connected to GND.
58	ATF ERROR	I	ATF error input.
59	S REEL FG	I	S reel FG signal input.
60	T REEL FG	I	T reel FG signal input.
61	NC		Not used. Connected to GND.
62	CAM VD	I	VD signal from camera circuit sync generator (VC board IC610). V cycle pulse.
63	FLD	I	FIELD signal from camera circuit sync generator.
64	VTR SYNC	I	Composite sync signal separated from recording/playback Y signal.
65		I	Connected to GND.
66	DRUM PG	I	Drum PG signal input. For drum phase servo. 33.3 msec. cycle "H" pulse.
67	DRUM FG	I	Drum FG signal input. For drum speed servo. 2.8 msec. cycle pulse.
68	CAP FG	I	Capstan FG signal input.
69	N.C.	O	Not used.

**7-4. MEDICAL CONTROL. MEDICAL PERSONNEL WILL REPORT TO THE MEDICAL CONTROL OFFICE (MCO) FOR ALL MEDICAL EMERGENCIES.**

[illegible]

Q#	Q	A
1	1. What is the purpose of the study?	The purpose of the study is to determine the effect of the independent variable on the dependent variable.
2	2. What is the independent variable?	The independent variable is the variable that is manipulated or changed by the researcher.
3	3. What is the dependent variable?	The dependent variable is the variable that is measured or observed by the researcher.
4	4. What is the control group?	The control group is the group of subjects that does not receive the treatment or intervention.
5	5. What is the experimental group?	The experimental group is the group of subjects that receives the treatment or intervention.
6	6. What is the hypothesis?	The hypothesis is a statement that predicts the outcome of the study.
7	7. What is the significance level?	The significance level is the probability of rejecting the null hypothesis when it is true.
8	8. What is the power of the study?	The power of the study is the probability of rejecting the null hypothesis when it is false.
9	9. What is the effect size?	The effect size is the magnitude of the difference between the two groups.
10	10. What is the confidence interval?	The confidence interval is the range of values that is likely to contain the true population parameter.
11	11. What is the null hypothesis?	The null hypothesis is the statement that there is no effect or no difference between the two groups.
12	12. What is the alternative hypothesis?	The alternative hypothesis is the statement that there is an effect or a difference between the two groups.
13	13. What is the p-value?	The p-value is the probability of obtaining the observed results, or more extreme results, if the null hypothesis is true.
14	14. What is the t-statistic?	The t-statistic is a measure of the difference between the two groups, relative to the variability within the groups.
15	15. What is the F-statistic?	The F-statistic is a measure of the difference between the two groups, relative to the variability within the groups.
16	16. What is the chi-square statistic?	The chi-square statistic is a measure of the difference between the observed frequencies and the expected frequencies.
17	17. What is the correlation coefficient?	The correlation coefficient is a measure of the strength and direction of the relationship between two variables.
18	18. What is the regression equation?	The regression equation is a mathematical model that describes the relationship between two variables.
19	19. What is the standard error of the estimate?	The standard error of the estimate is a measure of the variability of the predicted values.
20	20. What is the standard error of the mean?	The standard error of the mean is a measure of the variability of the sample mean.

## 6-5. MODE CONTROL MICRO PROCESSOR PIN FUNCTIONS (VS BOARD IC503: MB89098PFV-G-107-BND)

Note 1: CCD-TR70/TR80

Note 2: CCD-TR400/TR750

Note 3: CCD-TR82/TR400/TR550

Pin No.	Signal Name	I/O	Function
1	TEST MODE 0	I	Connected to GND.
2	TEST MODE 1	I	Connected to GND.
3	X0	I	10 MHz clock oscillation circuit.
4	X1	O	
5	VSS		GND
6	RESET	I	Reset input.
7	DATA SW	I	Date (+) key (CK board S221) input. Normally "H". "L" when key is pressed.
8	TIME SW	I	Time key (CK board S222) input. Normally "H". "L" when key is pressed.
9	EJECT SW	I	Cassette eject switch (FK board S103) input. Normally "H". "L" when switch is pressed.
10	VTR MODE SW	I	Power supply switch (CK board S223) input. "L" when power supply switch is at "Video".
11	AGE SW	I	AGE switch input. "L" when key is pressed. Not used.
12	START/STOP SW	I	Start/stop key (FK board S102) input. "L" when key is pressed.
13	CC DOWN SW	I	CCDOWN switch (mechanism section) input. "L" when cassette compartment is locked.
14	CAM4-STBY SW	I	Power supply switch (CK board S223), stand-by switch (FK board S101) input. "L" when power supply switch is at "Camera" and stand-by switch at "Standby".
15	BATT IN	I	Main battery detection input. "H" when main battery is loaded or external power supply is connected.
16	PB V	I	System sync signal from mechanism control micro processor (VS board IC505).
17	RF SWP	I	RF switching pulse.
18	LANC POWER ON	I	Power on signal input from wired remote commander. "L" when power switch of remote commander is pressed.
19	LI PRE END	I	Lithium battery end detection input. "L" when lithium battery has worn out or has not been loaded.
20	EEPROM WE	O	EEPROM (VS board IC502) writing enable signal. "L" when writing data.
21			Not used.
22			
23	TALLY LED	O	Tally LED on/off signal.
24	SYSTEM RESET	O	Reset signal of all systems. Normally "H". "L" when reset.
25	N.C.	O	Not used.
26	BATT IN	I	Not used.
27	N.C.		
28	N.C.		
29	N.C.		Infrared remote commander signal input.
30	SIRCS SIG	I	
31	N.C.		Not used.
32			
33	CS EEPROM	O	Chip select signal to EEPROM (VS board IC502).
34	CS VIDEO	O	Chip select signal to video IC (VS board IC201).
35	EVF DA STB	O	Chip select signal to EVF of COLOR EVF (VF board IC903) (Note 1).
36	CS SG	O	Chip select signal to SYNC generator (VC board IC610).
37	CS DA	O	Strobe signal to DA (VS board IC951).
38	CS CAM	O	Chip select signal to camera micro processor (VC board IC602).
39	N.C.	O	Not used.
40	N.C.	O	

Pin No.	Signal Name	I/O	Function
70	T/E LED ON	O	TAPE LED on/off signal. 200 msec. cycle "H" pulse during REC/PB.
71	SP/LP	O	SP/LP switching signal. "L": LP.
72	ME/AF OUT	O	Recording current switching signal. "H": ME tape.
73	CAP PWM	O	Capstan error signal output. PWM signal.
74	DRUM PWM	O	Drum error signal output. PWM signal.
75	CFG HMS	I	Capstan FG signal input.
76	5.9M ATF CLK	O	Clock signal for ATF servo IC (IC508).
77	CS TO ATF	O	Chip select signal for ATF servo IC.
78	DATA TO ATF	O	Serial data output to ATF servo IC.
79	ATF SCK	O	Serial clock output to ATF servo IC.
80	ATF STBY	O	Standby signal for ATF servo IC.
81	SP/LP DET	I	Discriminates recording mode.
82	CLOG DET	I	Head clog detection signal. "L": Normal.
83	REF PILOT	O	Reference pilot signal for ATF servo.
84	N.C.		Not used. Connected to GND.
85	N.C.	I	
86	VSS		GND
87	VDD		Connected to SS3.6V.
88	VPP		
89	DRUM ACC	O	Drum motor acceleration signal.
90	DRUM BLK	O	Drum motor brake signal. Normally: "L".
91	N.C.		Not used. (open)
92	N.C.	O	
93	VIDEO IN/OUT	O	Video input/output switching signal. "L": Video output.
94	AUDIO IN/OUT	O	Audio input/output switching signal. "H": Audio output.
95	VA PB MODE	O	REC/PB switching signal of video; audio circuit. "H": PB.
96	VI SWP	O	RF switching pulse signal for video circuit.
97	RF SWP	O	RF switching pulse signal for REC/PB amp and audio circuit.
98	HEAD CHG	O	Head switching signal.
99	CAP ON	O	Capstan driver on/off control signal. "H": Capstan on.
100	CAP FWD/REV	O	Capstan rotation direction control signal. "H": FWD. "L": RVS.

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Year	Percentage
1990	45
1994	55
1998	65

Year	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

Ref	Report Date	Ref	Project
1	10/10/2010	1	10/10/2010
2	10/10/2010	2	10/10/2010
3	10/10/2010	3	10/10/2010
4	10/10/2010	4	10/10/2010
5	10/10/2010	5	10/10/2010
6	10/10/2010	6	10/10/2010
7	10/10/2010	7	10/10/2010
8	10/10/2010	8	10/10/2010
9	10/10/2010	9	10/10/2010
10	10/10/2010	10	10/10/2010
11	10/10/2010	11	10/10/2010
12	10/10/2010	12	10/10/2010
13	10/10/2010	13	10/10/2010
14	10/10/2010	14	10/10/2010
15	10/10/2010	15	10/10/2010
16	10/10/2010	16	10/10/2010
17	10/10/2010	17	10/10/2010
18	10/10/2010	18	10/10/2010
19	10/10/2010	19	10/10/2010
20	10/10/2010	20	10/10/2010
21	10/10/2010	21	10/10/2010
22	10/10/2010	22	10/10/2010
23	10/10/2010	23	10/10/2010
24	10/10/2010	24	10/10/2010
25	10/10/2010	25	10/10/2010
26	10/10/2010	26	10/10/2010
27	10/10/2010	27	10/10/2010
28	10/10/2010	28	10/10/2010
29	10/10/2010	29	10/10/2010
30	10/10/2010	30	10/10/2010
31	10/10/2010	31	10/10/2010
32	10/10/2010	32	10/10/2010
33	10/10/2010	33	10/10/2010
34	10/10/2010	34	10/10/2010
35	10/10/2010	35	10/10/2010
36	10/10/2010	36	10/10/2010
37	10/10/2010	37	10/10/2010
38	10/10/2010	38	10/10/2010
39	10/10/2010	39	10/10/2010
40	10/10/2010	40	10/10/2010
41	10/10/2010	41	10/10/2010
42	10/10/2010	42	10/10/2010
43	10/10/2010	43	10/10/2010
44	10/10/2010	44	10/10/2010
45	10/10/2010	45	10/10/2010
46	10/10/2010	46	10/10/2010
47	10/10/2010	47	10/10/2010
48	10/10/2010	48	10/10/2010
49	10/10/2010	49	10/10/2010
50	10/10/2010	50	10/10/2010



Pin No.	Signal Name	I/O	Function
41	N.C.		Not used.
42	N.C.		
43	SEG19	O	
44	SEG18	O	LCD segment terminal drive signal. Pulse of 4 values (0V, 1.2V, 2.4V and 3.6V). (Note 2)
45	SEG17	O	
46	SEG16	O	
47	VCC		+3.6V power supply (+3V power supply during backup).
48	SEG15	O	
49	SEG14	O	
50	SEG13	O	
51	SEG12	O	LCD segment terminal drive signal. Pulse of 4 values (0V, 1.2V, 2.4V and 3.6V). (Note 2)
52	SEG11	O	
53	SEG10	O	
54	SEG09	O	
55	SEG08	O	
56			GND
57	SEG07	O	
58	SEG06	O	
59	SEG05	O	
60	SEG04	O	LCD segment terminal drive signal. Pulse of 4 values (0V, 1.2V, 2.4V and 3.6V). (Note 2)
61	SEG03	O	
62	SEG02	O	
63	SEG01	O	
64	SEG00	O	
65	V3	I	3.6V
66	V2	I	2.4V
67	V1	I	1.2V
68	V0	I	0V
69	COM0	O	LCD drive bias voltage. (Note 2)
70	COM1	O	
71	COM2	O	
72	COM3	O	
73	CS OSD	O	Chip select signal to character generator (VC board IC614).
74	CS MECHA	O	Chip select signal to mechanism control micro processor (VS board IC505).
75	DATA TO MASTER	I	Serial data input signal.
76	DATA TO SLAVE	O	Serial data output signal.
77	MODECON SCK	O	Serial data transfer clock.
78	N.C.	O	Not used.
79	VTR DD ON	O	VTR DC-DC converter control signal. "H" when power switch is at "Player/Video" or "Camera".
80	CAM DD ON	O	CAMERA DC-DC converter control signal.
81	AVSS		A/D port GND.

Pin No.	Signal Name	I/O	Function
82	K AD IN 0	I	Key input. A/D port. REC key (FK board S101, 106 (Note 2)) FF key (FK board S105) STOP key (FK board S104)
83	K AD IN 1	I	Key input. A/D port. PLAY key (FK board S111) REW key (FK board S110) PAUSE key (FK board S109)
84	K AD IN 2	I	Key input. A/D port. SET key (CK board S204) SELECT (-) key (CK board S203) SELECT (+) key (CK board S202) MENU key (CK board S201)
85	K AD IN 3	I	Key input. A/D port. FOCUS MANUAL key (CK board S211 (Note 2)) FADER key (CK board S208) BACK LIGHT/BRIGHT key (CK board S207) PROGRAM AE key (CK board S205)
86	K AD IN 4	I	Key input. A/D port. STEADY SHOT key (CK board S211 (Note 3)) EDIT SEARCH (-) key (CK board ) EDIT SEARCH (+) key (CK board ) COUNTER RESET key (CK board )
87	N.C.		Not used.
88	N.C.		
89	N.C.		
90	AVCC		A/D port power supply (+3.6V).
91	BATT SENS	I	For main battery voltage input. (Voltage divided into 1/3.14 by R586, R587).
92	N.C.	I	Not used.
93	BRIGHT B	I	Brightness adjusting dial input. Pulse input by dial rotation. (Note 2).
94	BRIGHT B	I	Brightness adjusting dial input. Pulse input by dial rotation. (Note 2).
95	LANC IN	I	LANC serial data input.
96	LANC OUT	O	LANC serial data output.
97	BUZZER	O	Buzzer output.
98	VCC		+3.6V power supply.
99	CL1	O	32 kHz clock oscillation circuit (for clock).
100	CL0	I	



## SECTION 7 ADJUSTMENTS

### 7-1. CAMERA SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 7-30.

#### 1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

##### 1-1-1. List of Service Tools

- Oscilloscope
- Adjusting driver
- Regulated power supply
- Color monitor
- Vectorscope
- Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.3	J-6080-818-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjusting remote commander (RM-95-remodeled partly) <sup>Note 1</sup>	J-6082-053-A	
J-6	Siemens star	J-6080-875-A	For checking the flange back
J-7	Extension cable (42P, 0.8 mm)	J-6082-285-A	For extension between the VC board (CN601) and VS board (CN203)
	Extension cable (34P, 0.8 mm)	J-6082-286-A	For extension between the AU-165 board CN1302 and VS board (CN202), For CCD-TR72/TR80/TR400/TR750
J-8	Extension cable (9P, 0.8 mm)	J-6082-288-A	For extension between the FK board and VS board (CN502)
	Extension cable (18P, 0.8 mm)	J-6080-289-A	For extension between the CK board and VS board (CN503)
J-9	Measuring pin tool for COLOR EVF	J-6082-192-A	For adjusting the COLOR EVF

**Note 1:** If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

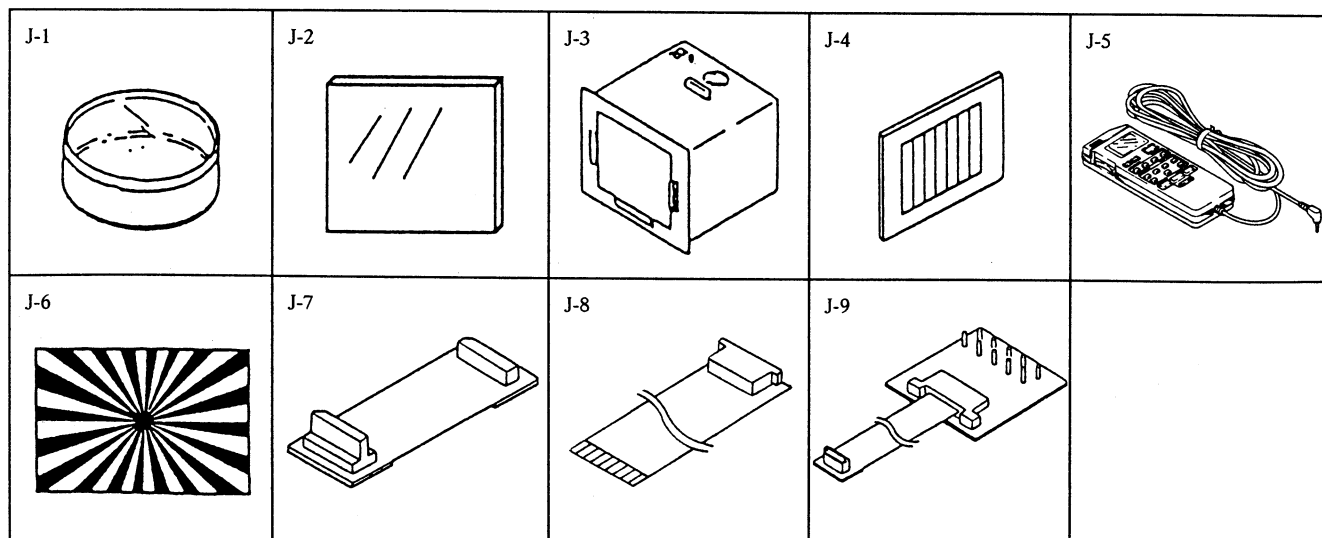


Fig. 7-1-1.

## SECTION 7 ADJUSTMENTS

### 7-1. CAMERA SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts (beginning from page 7-28).

#### 1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

##### 1-1-1. List of Service Tools

- Oscilloscope
- Adjusting screw
- Registered power supply
- Color monitor
- Multimeter
- Digital indicator

Part No.	Name	Part No.	Usage
2-1	Filter for color temperature measurement (C14)	J-600-008-A	Use while adjusting tint/black.
2-2	HD-Star (A)	J-600-409-A	White balance adjustment/black.
	HD-Star G1	J-600-410-A	White balance check.
2-3	Pattern test PTH-001	J-600-340-A	
2-4	Color chart for yellow test	J-600-341-A	
2-5	Adjusting master monitor (XGA-10 connected party) <sup>*)</sup>	J-600-043-A	
2-6	Shutter stop	J-600-073-A	For checking the target test.
2-7	Extension cable (100, 50 mm)	J-600-383-A	For extension between the VC board (C000) and V5 board (C000).
	Extension cable (100, 50 mm)	J-600-384-A	For extension between the V1-V2 board (C000) and V3 board (C000). For CCD-5000/7000/8000/8000.
2-8	Extension cable (50, 50 mm)	J-600-385-A	For extension between the V5 board and V1 board (C000).
	Extension cable (50, 50 mm)	J-600-386-A	For extension between the V3 board and V2 board (C000).
2-9	Mounting pin tool for CCD-08 EFP	J-600-403-A	For adjusting the CCD-08 EFP.

**Note 1:** If the color temperature IC in the adjusting master monitor is not the new color processor (SPD7000 C00 12), the page cannot be verified. In this case, replace with the new color processor (SPD7000 C00 12).

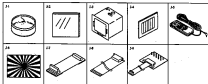


Fig. 7-1-1

### 1-1-2. Preparations

**Note 1:** For further details of how to remove the cabinet and each board, refer to "2. Disassembly".

**Note 2:** When adjusting only, the lens block and VC board need not be taken apart.

- 1) Connect the equipments for adjusting as shown in Fig. 7-1-3.
- 2) The F panel block (MA board) is not required in adjustments. Remove the following connector.
  1. CN1301 of the AU board
- 3) If remove the cabinet (R) (Power switch, camera function switch and electronic view-finder), set to the camera power supply ON mode (Note 1), and disconnect the following connectors.
  1. CN503 of VS board
  2. CN206 of VS board
  3. CN101 of ZB boardBe sure to exit this mode after completing the adjustment. (Note 2)
- 4) Turning OFF the Auto Focus Using the Adjusting Remote Commander
  1. Set data: 01 to page: 6, address: 25.  
(The auto focus will turn OFF. The focus can be adjusted using the focus button on the adjusting remote commander. But the HOLD switch must be set to OFF.)
  2. After completing the adjustment/operation check, set data: 00 to page: 6, address: 25.
- 5) Turning OFF the STEADY SHOT Function Using the Adjusting Remote Commander (CCD-TR82/TR400/TR550/TR750)
  1. Set data: 02 to page: 6, address: 32.
  2. Set data: 01 to page: 6, address: 33.  
(The STEADY SHOT will go OFF.)
  3. After completing the adjustment/operation check, return the data of address: 32 and address: 33 of page: 6 to 00.

**Note 1:** Setting the Forced Camera Power Supply ON Mode

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.  
By carrying out the above, the camera can be operated even if the cabinet (R) has been removed. Be sure to exit the forced camera power ON mode after completing the adjustment.

**Note 2:** Exiting the Forced Camera Power Supply ON Mode

- 1) Set data: 01 to page: 1, address: 00.
- 2) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 00 to page: 1, address: 00.

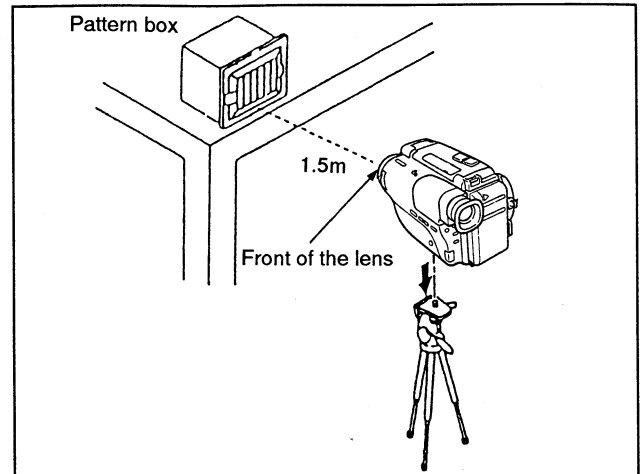


Fig. 7-1-2.

### 1-1-8. Preparations

**Note 1:** The *Roller* inside of lens is removed. Be certain not to touch lens, mirror, or lens assembly.

**Note 2:** When adjusting only, the lens block and VC board need not be disconnected.

- 1) Connect the equipment for adjusting as shown in Fig. 7-1-1.
- 2) The *F* panel block (Add. board) is not required in adjustments. Remove the following connectors:
  1. CDS-201 of the add board
- 3) If remove the add-on (2). (Power switch, camera function switch and electronic viewfinder, set in the camera, power supply ON switch (Note 1), and disconnect the following connectors:
  1. CDS-201 of VC board
  2. CDS-201 of VC board
  3. CDS-201 of CB board

Be sure to set this mode after completing the adjustment. (Note 1)

- 4) Turning OFF the Auto Focus Using the Adjusting Remote Commander

1. See item (1) to page 4, address 35.  
(The auto focus will turn OFF. The focus can be adjusted using the focus button on the adjusting remote commander. But the HOLD switch must be set to OFF.)

2. After completing the adjustment/operation check, set item (10) to page 4, address 35.

- 5) Turning OFF the STRATEGY SHOOT Function Using the Adjusting Remote Commander (CDS-201/VC-STRATEGY TRIP)

1. See item (1) to page 4, address 35.
2. See item (4) to page 4, address 35.  
(The STRATEGY SHOOT will go OFF.)

3. After completing the adjustment/operation check, return the data of address 35 and address 35 of page 4 to 00.

**Note 3:** Setting the Focus Camera/Power Supply ON Mode

1. See item (2) to page 1, address 00.
2. See item 21 to page 3, address 00, and press the PAUSE/return of the adjusting remote commander.

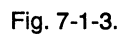
By carrying out the above, the camera can be operated even if the add-on (2) has been removed. Be sure to set the focus camera power ON mode after completing the adjustment.

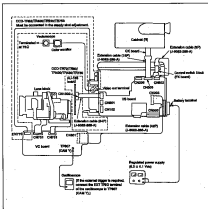
**Note 4:** Setting the Standard Camera Focus/Supply ON Mode

1. See item (1) to page 1, address 00.
2. See item 00 to page 3, address 00, and press the PAUSE/return of the adjusting remote commander.
3. See item 00 to page 1, address 00.



Fig. 7-1-1.







### 1-1-3. Precautions

#### 1. Switch settings

Adjust the switches to the following positions, and adjust without loading the cassette tape, unless specified otherwise.

1. Camera/player power switch  
(Control switch block (Control switch block (CK board)) .....Camera
2. Standby switch (Control switch block (FK board)) .. Standby
3. PROGRAM AE button (Control switch block (CK board))  
.....Off
4. FOCUS switch (Control switch block (CK board)) ...Manual
5. BACK LIGHT button (Control switch block (CK board))  
.....Off
6. STEADY SHOT button (CCD-TR82/TR400/TR550/TR750)  
(Control switch block (CK board)).....Off

#### 2. Adjusting Procedure

Adjust in the given order.

#### 3. Subject

- 1) Color bar chart (Standard picture frame)  
Adjust the picture frame as shown in Fig. 7-1-4. if adjustments are performed using the color bar chart.  
(Standard picture frame)
- 2) White pattern (Standard picture frame)  
Remove the color bar chart from the pattern box, and so that the white pattern will be displayed.  
Don't touch the zoom switch.

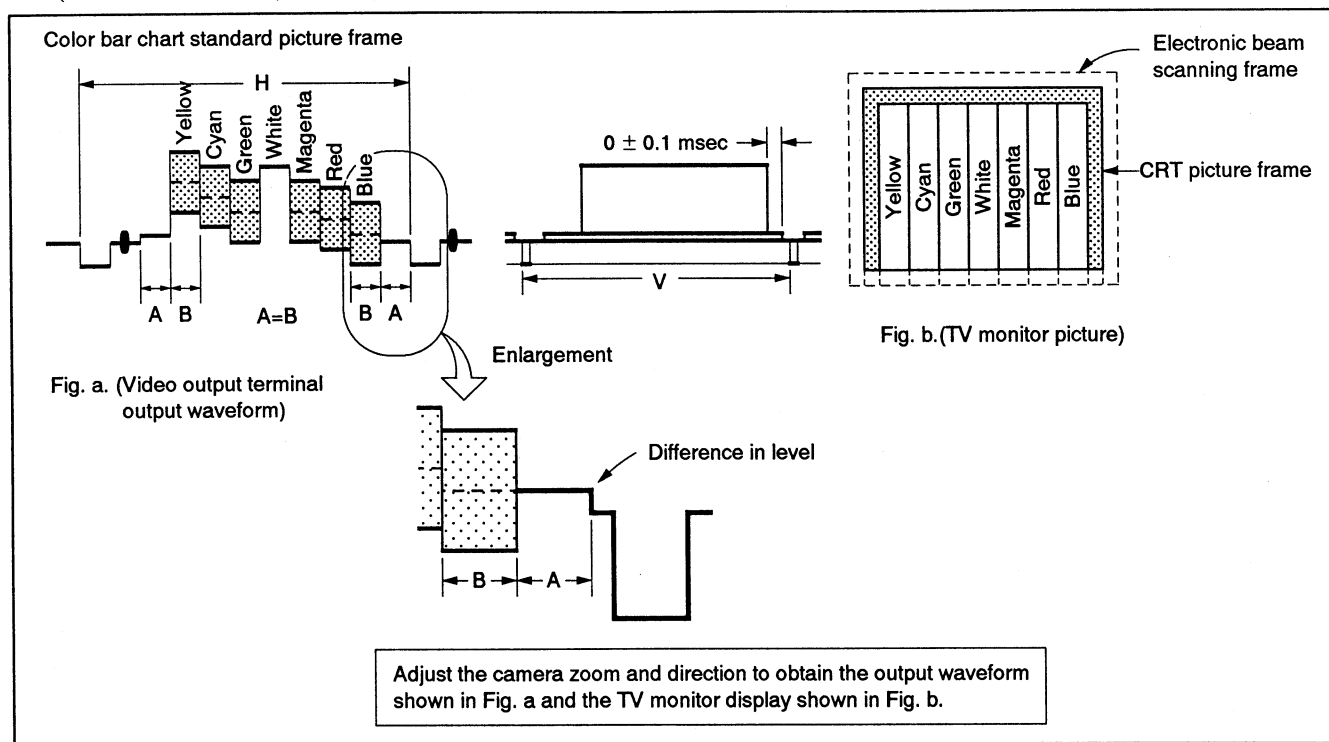


Fig. 7-1-4.

#### 3) Chart for flange back adjustment

Combine a white A0 size (1189 mm× 841 mm) paper to a black one, and make the chart shown in Fig. 7-1-5.

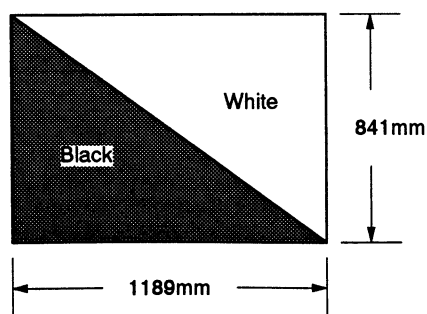


Fig. 7-1-5.

**Note:** Use the non-reflecting and non-glazing vellum paper whose size is more than A0, and make the boundary between white and black to be smoothly flat.

## 1-1-2. Precautions

### 1. Switch settings

Adjust the switches to the following positions, and adjust without switching the power supply, unless specified otherwise.

1. **Color display power switch**  
(Control switch block (Control switch block (CR board)) — **On**)
2. **Steadily rotate** (Control switch block (FR board)) — **Steadily**
3. **PROGRAM AD button** (Control switch block (CR board)) — **Off**
4. **FOCUS switch** (Control switch block (CR board)) — **Align**
5. **BACK LIGHT button** (Control switch block (CR board)) — **Off**
6. **STEADY SHOT button** (CCD TRIGGER/VIDEO TRIGGER board) (Control switch block (CR board)) — **Off**

### 2. Adjusting Procedure

Adjust in the given order.

#### 1. Subject

- 1) **Color bar chart** (Standard picture frame)  
Adjust the picture frame as shown in Fig. 7-1-4. If adjustments are performed using the color bar chart, (Standard picture frame)
- 2) **White pattern** (Standard picture frame)  
Remove the color bar chart from the picture box, and use the white pattern will be displayed.  
Don't touch the screen surface.

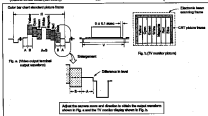


Fig. 7-1-4.

#### 2) Check for fringe/back adjustment

Consider a white A4 size (210 mm × 297 mm) paper in a black box, and make the chart shown in Fig. 7-1-5.



Fig. 7-1-5.

**Notes:** Use the non-reflecting and non-glazing yellow paper whose size is more than A4, and make the boundary between white and black as accurately as possible.

#### 1-1-4. Adjusting Remote Commander

The camera section is adjusted by changing the constant or coefficient of the digital signal processing calculation, or modifying the output voltage of the EVR IC (VC board IC603). This is controlled by the camera micro processor (VC board IC602), which reads the data written in the nonvolatile memory (VC board IC601: EEPROM), and transmits it to the digital signal processing circuit and EVR.

To perform adjustments, adjustment data written in the nonvolatile memory must be rewritten, using the adjusting remote commander.

The adjusting remote commander uses the remote commander signal line (LANC) to communicate mutually with the camera microprocessor. The page, address and the up/down commands of the data are transmitted from the adjusting remote commander to the camera micro processor. And, the page, address, and data are transmitted for the vice versa.

##### 1. Using the adjusting remote commander

- 1) Connect the adjusting remote commander to the remote terminal.
- 2) Adjust the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 7-1-6.

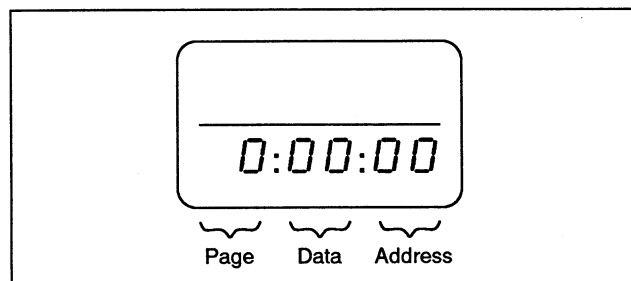


Fig. 7-1-6.

- 3) Operate the adjusting remote commander as follows.

- Changing the page

The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH- button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	e	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 7-1-1.

- Changing the address

The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.

- Changing the data (Data setting)

The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed.

There are altogether 256 data, from 00 to FF.

- Writing the adjustment data

The PAUSE button must be pressed to write the adjustment data (F page) in the nonvolatile memory.

(The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)

- 4) Select page: 6, address: 00, and adjust the data to 01. Page F, and enables the camera section (Addresses 01 to BF of page F) to be adjusted.
- 5) After completing all adjustments, turn off the main power supply (6.3V) once.

##### 2. Precautions upon using the adjusting remote commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

#### 1-1-4. Adjusting Stereo Commander

The stereo system is adjusted by changing the content or coefficient of the digital signal processing calculation, or modifying the output range of the DVB, IC/VC board (ICB2). This is controlled by the content value processor (VC board (VCR2), which reads the data written in the nonvolatile memory (VC board (VCR2) EEPROM), and outputs it to the digital signal processing circuit and DVB.

In the picture adjustment, adjustment data written in the nonvolatile memory read in sequence, using the adjusting stereo commander.

The adjusting stereo commander uses the stereo commander signal line (LASC) to communicate initially with the stereo subprocessor. The page, address and the options commands of the data are transmitted from the adjusting stereo commander to the stereo sub-processor. And, the page, address, and data are transmitted from the stereo sub-

#### 1. Using the adjusting stereo commander

1) Connect the adjusting stereo commander to the stereo terminal.

2) Adjust the ICB2 content of the adjusting stereo commander to "HOLD" (EEPROM position).

If it has been properly executed, the LCD in the adjusting stereo commander will display as shown in Fig. 7-1-4.



Fig. 7-1-4.

#### 2) Operation for adjusting stereo commander is follows.

##### 1. Changing the page

The page increases when the NEXT SEARCH+ button is pressed, and decreases when the NEXT SEARCH- button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal number	0 1 2 3 4 5 6 7 8 9 A B C D E F
LED display	0 1 2 3 4 5 6 7 8 9 A b c d e f
Decimal number (conversion value)	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Table 7-1-1.

##### 2. Changing the address

The address increases when the PP (+) button is pressed, and decreases when the STOP (-44) button is pressed. There are altogether 256 addresses, from 00 to FF.

##### 3. Changing the data (Data setting)

The data increases when the PLAY (+) button is pressed, and decreases when the STOP (-44) button is pressed.

There are altogether 256 data, from 00 to FF.

##### 4. Writing the adjustment data

The WRITE button must be pressed to write the adjustment data (F page) in the nonvolatile memory.

(The new adjustment data (F) can be recorded in the nonvolatile memory if this step is not performed.)

4) Select page F, address 00, and adjust the data to 00. (Page F) and enables the stereo picture (Address 00 is 10F of page F) to be adjusted.

5) After completing all adjustments, turn off the main power supply (L-PS) once.

#### 3. Precautions upon using the adjusting stereo commander

Initializing of the adjusting stereo commander may erase the current adjustment data at times. To prevent this, it is recommended that all adjustment data be saved before before beginning adjustments and save adjustment data after each adjustment.

### 1-1-5. Page F Address List

**Note 1:** The data already listed in the adjustment data memo column are fixed values.

**Note 2:** The adjustment data initial values are values just after executing "Page F Data Initialization" and "Page F Data Modification". They are different from the values after executing all adjustments.

**Note 3:** In some cases, data have been input to the page F addresses C0 to FF. This has no relation to the adjustments.

**Note 4:** No mark : CCD-TR42/TR72/TR80/TR430

( ) : CCD-TR82/TR550

< > : CCD-TR70

《 》 : CCD-TR400/TR750

Address	Adjustment data	
	Initial value	Memo column
00	5C (5A) <5E> 《56》	5C (5A) <5E> 《56》
01	0A (00)	0A (00)
02	00	00
03	00 (07)	00 (07)
04	80	
05	80	
06	80	
07	80	
08	2D	
09	26	
0A	FA	
0B	F1	
0C	30	
0D	00	
0E	58	
0F	00	
10	E0	E0
11	8F	
12	6C	
13	36	
14	3C	
15	B6	
16	0D	
17	A3	
18	12	
19	8E	
1A	10	
1B	E2	
1C	0C	0C
1D	00	00
1E	80	
1F	80	
20	80 (79)	80 (79)
21	80 (79)	80 (79)
22	00	00
23	59	53
24	43	43
25	A5 (B5)	A5 (B5)
26	23	23
27	3A	3A
28	A2	A2
29	0B	0B

Table 7-1-2 (1).

# **1-4-B Page F Address List**

**Note 1:** The data already listed in the adjustment data column address are final values.

**Note 2:** The adjustment data (initial values are values just after executing "Page F Data Initialization" and "Page F Data Modification". They are different from the values after executing all adjustments.

**Note 3:** In some cases, data have been input in the page F addresses C2 to F0. This has no relation to the adjustments.

**Note 4:** No such : C20 (B4) T007 T040 T040

{ : C20 (B4) T000  
 : C20 (B4)  
 : C20 (B4) T040 T040

Address	Adjustment data	
	Initial value	Memory address
00	00 (1A) 000 (000)	0C (1A) 000 (000)
01	0A (00)	0A (00)
02	00	00
03	00 (00)	00 (00)
04	00	
05	00	
06	00	
07	00	
08	00	
09	00	
0A	00	
0B	00	
0C	00	
0D	00	
0E	00	
0F	00	
10	00	00
11	00	
12	00	
13	00	
14	00	
15	00	
16	00	
17	A0	
18	10	
19	00	
1A	10	
1B	00	
1C	00	00
1D	00	00
1E	00	
1F	00	
20	00 (7F)	00 (7F)
21	00 (7F)	00 (7F)
22	00	00
23	00	00
24	00	00
25	A0 (00)	A0 (00)
26	00	00
27	00	00
28	A0	A0
29	00	00

**Table 1-4-B (3)**

Address	Adjustment data	
	Initial value	Memo column
2A	0C (2C)	0C (2C)
2B	58 (50)	58 (50)
2C	FF	FF
2D	06 ((04))	06 ((04))
2E	17 (16)	17 (16)
2F	22 (27) 《29》	22 (27) 《29》
30	08	08
31	00	00
32	50 (47) 《48》	50 (47) 《48》
33	68	68
34	00 (02)	00 (02)
35	30 (50)	30 (50)
36	02	02
37	00	00
38	76	76
39	6A	6A
3A	80	80
3B	20	20
3C	F0	F0
3D	03 (02)	03 (02)
3E	00	
3F	00	
40	00	
41	00	
42	00	
43	00	
44	00	
45	00	00
46	00	
47	00	
48	00	
49	00	
4A	00	
4B	00	
4C	00	
4D	00	
4E	00	00
4F	20	20
50	05 (32)	05 (32)
51	02	02
52	66	66
53	18	18

Table 7-1-2 (2).

Address	Adjustment data	
	Initial value	Memo column
54	66 (6B)	66 (6B)
55	9F	9F
56	66	66
57	66 (6C)	66 (6C)
58	59 (5C)	59 (5C)
59	83	83
5A	67	67
5B	5C	5C
5C	5C	5C
5D	4A	4A
5E	1E (20)	1E (20)
5F	5C	5C
60	3A (3C)	3A (3C)
61	33	33
62	0C	0C
63	26	26
64	04	04
65	02	02
66	00	00
67	00	00
68	00	00
69	00	00
6A	00	00
6B	00	00
6C	00	00
6D	00	00
6E	00	00
6F	34	34
70	10	10
71	26	26
72	0F	0F
73	0F	0F
74	00	00
75	23	23
76	1B	1B
77	E0	E0
78	A0	A0
79	30	30
7A	10	10
7B	50	50
7C	58	58
7D	88	88

Table 7-1-2 (3).

Address	Adjustment data	
	Initial value	Memory column
1A	00 (00)	00 (00)
1B	00 (00)	00 (00)
1C	00	00
1D	00 (00)	00 (00)
20	11 (00)	11 (00)
2F	22 (17) 000	22 (17) 000
30	00	00
31	00	00
32	30 (17) 000	30 (17) 000
33	00	00
34	00 (00)	00 (00)
35	00 (00)	00 (00)
36	00	00
37	00	00
38	70	70
39	0A	0A
3A	00	00
3B	00	00
3C	70	70
3D	00 (00)	00 (00)
3E	00	
3F	00	
40	00	
41	00	
42	00	
43	00	
44	00	
45	00	
46	00	
47	00	
48	00	
49	00	
4A	00	
4B	00	
4C	00	
4D	00	
4E	00	
4F	00	
50	70 (70)	00 (00)
51	00	00
52	00	00
53	00	00

Table 7-1-4 (2)

Address	Adjustment data	
	Initial value	Memory column
54	00 (00)	00 (00)
55	00	00
56	00	00
57	00 (00)	00 (00)
58	00 (00)	00 (00)
59	00	00
5A	00	00
5B	00	00
5C	00	00
5D	00	00
5E	00 (00)	00 (00)
5F	00	00
60	0A (00)	0A (00)
61	00	00
62	00	00
63	00	00
64	00	00
65	00	00
66	00	00
67	00	00
68	00	00
69	00	00
6A	00	00
6B	00	00
6C	00	00
6D	00	00
6E	00	00
6F	00	00
70	10	10
71	00	00
72	00	00
73	00	00
74	00	00
75	00	00
76	10	10
77	00	00
78	00	00
79	00	00
7A	00	00
7B	00	00
7C	00	00
7D	00	00

Table 7-1-4 (3)



Address	Adjustment data	
	Initial value	Memo column
7E	66	66
7F	46	46
80	8F	8F
81	13	13
82	30	30
83	60	60
84	70	70
85	80	80
86	A0	A0
87	C0	C0
88	70	70
89	78	78
8A	80	80
8B	90	90
8C	A0	A0
8D	40	40
8E	FF	FF
8F	00	00
90	00 <11>	00 <11>
91	77	77
92	00	00
93	FB	FB
94	02	02
95	32	32
96	6B	6B
97	8D	8D
98	A1	A1
99	30	30
9A	30	30
9B	21	21
9C	72	72
9D	00	00
9E	00	00
9F	00	00
A0	00	00
A1	00	00
A2	00	00
A3	02	02
A4	80	80
A5	00	00
A6	80	80
A7	00	00

Table 7-1-2 (4).

Address	Adjustment data	
	Initial value	Memo column
A8	00	00
A9	80	80
AA	00	00
AB	00	00
AC	02	02
AD	44	44
AE	3D	3D
AF	1B (25)	1B (25)
B0	3D	3D
B1	1B (25)	1B (25)
B2	A4 (A2)	A4 (A2)
B3	4B	4B
B4	00	00
B5	20	20
B6	00	00
B7	05	05
B8	00	00
B9	20	20
BA	00	00
BB	70 (6E)	70 (6E)
BC	35 (32)	35 (32)
BD	54	54
BE		
BF		
C0 to EF		
F0		
F1		
F2		
F3		
F4		
F5		
F6		
F7		
F8		
F9		
FA		
FB		
FC		
FD		
FE		
FF		

Table 7-1-2 (5).

Address	Adjustment data	
	Initial value	Masked values
7E	00	00
7F	40	40
80	80	80
81	15	15
82	30	30
83	60	60
84	90	90
85	80	80
86	A0	A0
87	C0	C0
88	70	70
89	70	70
8A	40	40
8B	50	50
8C	A0	A0
8D	60	60
8E	FF	FF
8F	00	00
90	00 (11)	00 (11)
91	70	70
92	00	00
93	70	70
94	00	00
95	30	30
96	60	60
97	80	80
98	A0	A0
99	50	50
9A	50	50
9B	20	20
9C	70	70
9D	00	00
9E	00	00
9F	00	00
AB	00	00
AC	00	00
AD	00	00
AE	00	00
AF	00	00
AD	00	00

Table 7-1-2 (5)

Address	Adjustment data	
	Initial value	Masked values
AB	00	00
AC	80	80
AD	00	00
AE	90	90
AF	00	00
AO	AA	AA
AB	00	00
AC	00 (2F)	00 (2F)
AD	00	00
AE	00 (2F)	00 (2F)
AF	AA (A0)	AA (A0)
BB	40	40
BC	00	00
BD	00	00
BE	00	00
BF	00	00
BB	00	00
BA	00	00
BB	70 (60)	70 (60)
BC	70 (70)	70 (70)
BD	AA	AA
BE		
BF		
CD to EF		
FD		
FE		
FF		
FD		
FE		
FF		
FA		
FB		
FC		
FD		
FE		
FF		

Table 7-1-2 (6)

### 1-1-6. Data Processing

The calculation of the DDS display and the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 7-1-3. indicates the hexadecimal notation-the decimal notation calculation table.

Hexadecimal notation-Decimal notation

The lower digits of the hexadecimal notation The upper digits of the hexadecimal notation																
	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

**Note:** ( ) indicate the adjusting remote control unit display.

**(Example)** In the case that the DDS display and the adjusting remote control unit display are BD (b d).

As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection "189" of the ① and ② in the above table is the decimal notation to be calculated.

Table 7-1-3.

#### 7-1-4. Data Processing

The calculation of the LOG display and the adjusting means command display data (hexadecimal notation) are required for obtaining the adjustment data of zero adjustment limit. In this case, after converting the hexadecimal notation to decimal notation, calculation and convert the result to hexadecimal notation, and use it as the adjustment data. Table 7-1-2, indicates the hexadecimal notation-the decimal notation calculation table.

Hexadecimal notation-Decimal notation

The lower digits of the hexadecimal notation The upper digits of the hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (16)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B (18)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (18)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (18)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (18)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (18)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Notes: ( ) indicates the adjusting means command code display.

(Example) In the case that the LOG display and the adjusting means command display are 00 (16).

As the upper digit of the hexadecimal notation is 0 (16), and the lower digit is 0 (16), hexadecimal "00" of the 0 and 0 is the above value in the decimal notation is hexadecimal.

Table 7-1-2.

## Using the PROGRAM AE Function

You can select from four PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action or night views.

### Selecting the Best Mode

Select the best mode by using the following examples.



#### Portrait mode

- A still subject such as a person or flower
- Subject behind an obstacle such as a net
- Zooming in on a subject in telephoto

#### Sports mode

- Outdoor sports scenes such as football, tennis, golf or skiing
- A landscape in a moving car

#### High-speed shutter mode

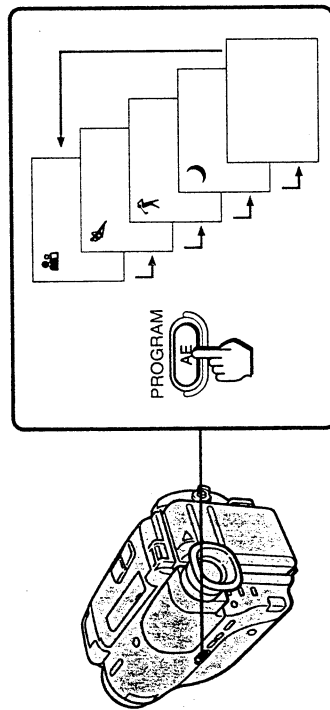
- A golf swing or a tennis match in fine weather with the ball captured clearly
- Playing back certain scenes with high-speed movements in clear, sharp picture

#### Twilight mode

- Recording night views neon signs or fireworks

### Using the PROGRAM AE Function

Press PROGRAM AE repeatedly so that the desired mode indicator appears inside the viewfinder.



#### Note on shutter speed

The shutter speed in each PROGRAM AE mode is as follows:

Portrait mode – between 1/60 to 1/2000

Sports mode – between 1/60 to 1/500

High-speed shutter mode – 1/4000

Twilight mode – 1/60

Normal mode – 1/60

## Fade-in and Fade-out

You can fade in or fade out to give your recording a professional appearance. When fading in, the picture will gradually appear from black or mosaic. The sound will also gradually increase. When fading out, the picture will gradually fade to black or mosaic. The sound will also decrease.

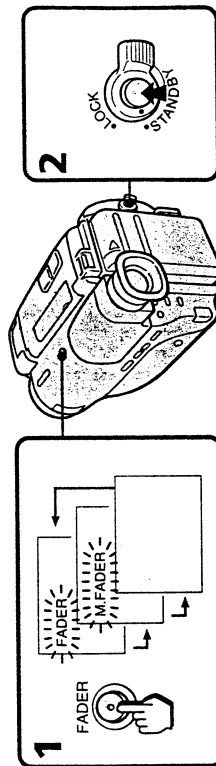
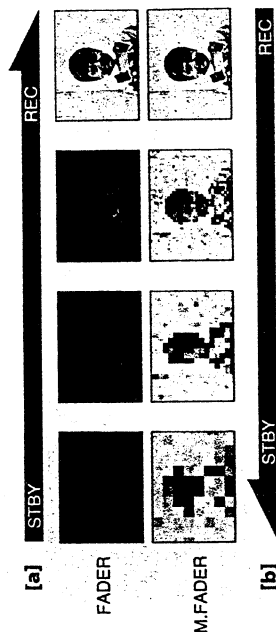
### When Fading in [a]

(1) During the camcorder is in Standby mode, press FADER. The fade indicator starts flashing.

(2) Press START/STOP to start recording. The fade indicator stops flashing.

### When Fading out [b]

(1) During recording, press FADER. The fade indicator starts flashing. (2) Press START/STOP to stop recording. The fade indicator stops flashing and recording stops.



### To Cancel the Fade-in/out Function

Before pressing START/STOP, press FADER once or twice until the fade indicator disappears.


### When the date/time indicator is displayed

The date/time does not fade in nor fade out.



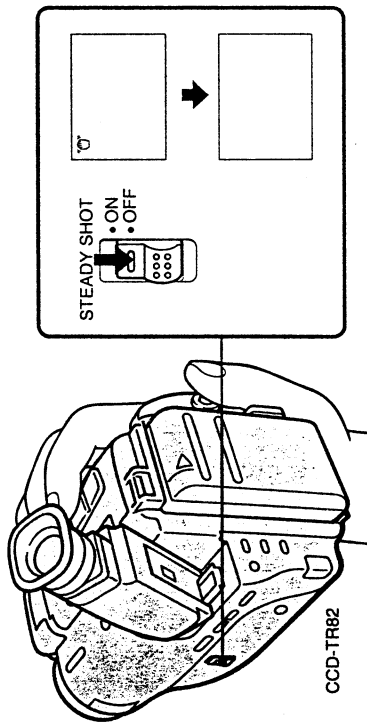
## Releasing the Steady Shot Function

### — For the model with the STEADY SHOT switch (CCD-TR82 only)

When you shoot, the  indicator appears in the viewfinder. This indicates that the Steady Shot function is working and the camcorder compensates for camera-shake.

You can release the Steady Shot function. Do not use the Steady Shot function such as when shooting stationary object with a tripod.

Set STEADY SHOT to OFF.







### To Activate the Steady Shot Function Again

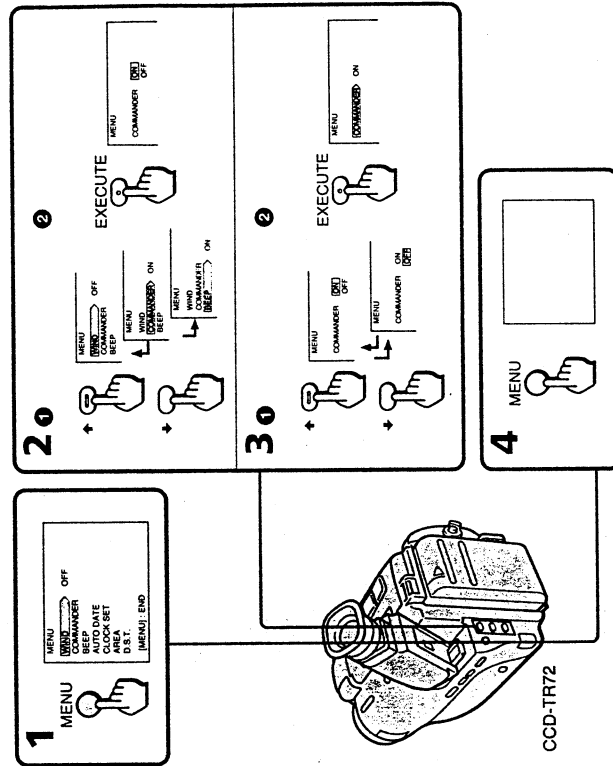
Set STEADY SHOT to ON.

#### Notes on the Steady Shot Function

- The Steady Shot function will not correct excessive camera-shake.
- When you switch the STEADY SHOT, the exposure may vary.

## Changing the Mode Settings

You can change the mode settings in the menu system to further enjoy the features and functions.  
**(1)** Press MENU to display the menu in the viewfinder. **(2)** Press  or  to select the desired item, then press EXECUTE. **(3)** Press  or  to set the desired mode, then press EXECUTE. If you want to change the other modes, repeat steps 2 and 3. **(4)** Press MENU to erase the menu display.



#### Note on BACK UP

When BACK UP indicator appears on the menu display, the settings of items are retained even when the battery is removed, as long as the lithium battery is in place.

### Selecting the Mode Setting of Each Item

#### Common Items in CAMERA and PLAYER Modes

- COMMANDER <ON/OFF>
- Select ON when using the supplied Remote Commander for the camcorder.
- Select OFF when not using the Remote Commander for the camcorder.

#### BEEP <ON/OFF>

- Select ON so that beeps sound when you start/stop recording.
- Select OFF when you do not want to hear the beep sound.





## Changing the Mode Settings

### Items in CAMERA mode

#### WIND <ON/OFF>

- For stereo models (CCD-TR72/TR80)
- Select ON to reduce wind noise when recording in strong wind.
- Normally select OFF.

#### AUTO DATE <ON/OFF>

- Select ON to record the date of recording automatically (AUTO DATE feature: p.12).
- Select OFF otherwise.

#### CLOCK SET

Select this item when you need to reset the clock (p.31).

#### AREA

Select the area number of the time zone where you will use the camcorder when you use the world clock (p.27).

#### D.S.T. <ON/OFF>

- Select ON to set the clock to Daylight Saving Time.
- Select OFF to set to standard time.

### Items in PLAYER mode

#### EDIT <ON/OFF>

- Select ON to minimize the picture deterioration when editing.
- Normally select OFF.

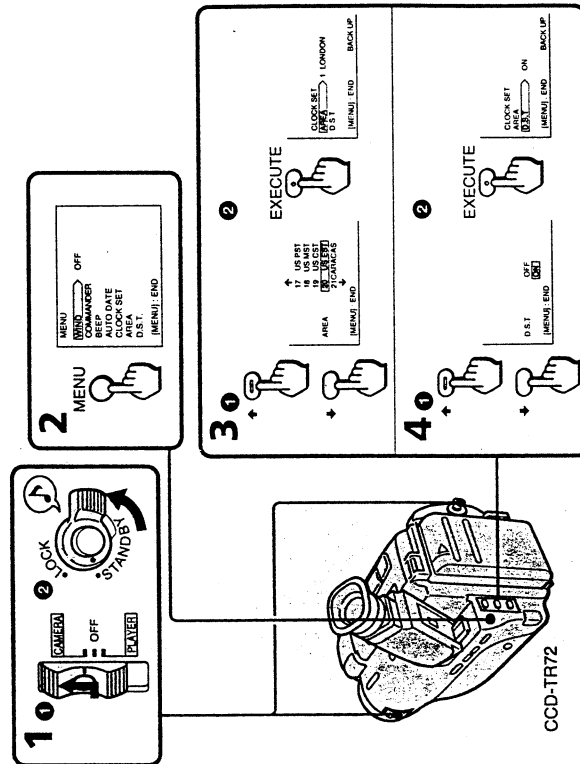
#### HIFI SOUND <STEREO/1/2>

- For stereo models (CCD-TR72/TR80)
- Normally select STEREO.
- Select 1 or 2 to play back a dual soundtrack tape.

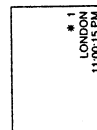
## Using the World Clock

Reset the clock according to the local time zone by setting AREA and D.S.T. modes in the menu system. First find the area number in the "Time zone chart" on page 28.

- (1) Turn STANDBY up. (2) Press MENU to display the menu. (3) Select AREA item (p.26). Press  $\uparrow$  or  $\downarrow$  to select the area number where you will use the camcorder. Press EXECUTE. (4) Select D.S.T. item (p.26). Press  $\uparrow$  or  $\downarrow$  to select ON for Daylight Saving Time or OFF for standard time. Press EXECUTE.



The area name appears in the viewfinder when using the world clock. The  $\star$  indicator appears in the viewfinder when setting to Daylight Saving Time.



### To Check the Date

Press DATE. To turn off the date indicator, press DATE again.

### To restore to Your Home Area Time

Reset the AREA mode in the menu system to your home area number.

See the next page for the Time Zone Chart. 27

## Overview of the Block Settings

### General Settings

- The block is used to create a new document.
- The block is used to create a new document.
- The block is used to create a new document.

The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.

### Block Settings

The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.

### Block Settings

The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.

### Block Settings

The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.

The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.



The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.



### Block Settings

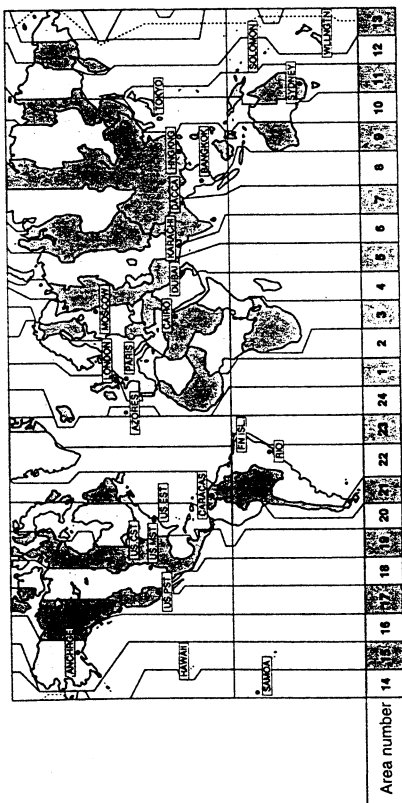
The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.

### Block Settings

The block is used to create a new document. The block is used to create a new document. The block is used to create a new document.

## Changing the Mode Settings

Time Zone Chart



Area number	Area name	Nations or area*
1	LONDON	England, GMT (Greenwich Mean Time), Morocco, Portugal
2	PARIS	Austria, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, CET
3	CAIRO	Egypt, Finland, Greece, Israel, Turkey
4	MOSCOW	Ethiopia, Iraq, Kenya, Saudi Arabia, former U.S.S.R. (west)
5	DUBAI	United Arab Emirates
6	KARACHI	Maldives, Pakistan
7	DACC	Bangladesh, Myanmar
8	BANGKOK	Cambodia, Indonesia (Jakarta), Thailand, Vietnam
9	HONGKONG	Australia (west), China, Hong Kong, Indonesia (Bali, Borneo), Malaysia, Philippines, Singapore, Taiwan
10	TOKYO	Japan, Korea
11	SYDNEY	Australia (east), Guam, Saipan
12	SOLOMON	New Caledonia
13	WILLINGTN	Fiji, New Zealand
14	SAMOA	Western Samoa
15	HAWAII	HST (Hawaii Standard Time), Tahiti
16	ANCHORAGE	AST (Alaska Standard Time)
17	US PST	PST (Pacific Standard Time)
18	US MST	MST (Mountain Standard Time)
19	US CST	CST (Central Standard Time), Mexico
20	US EST	EST (East Standard Time), Peru
21	CARACAS	Chili, Dominica, Venezuela
22	RIO	Argentina, Brazil, Uruguay
23	FN ISL	Fernando de Noronha
24	AZORES	Azores Islands

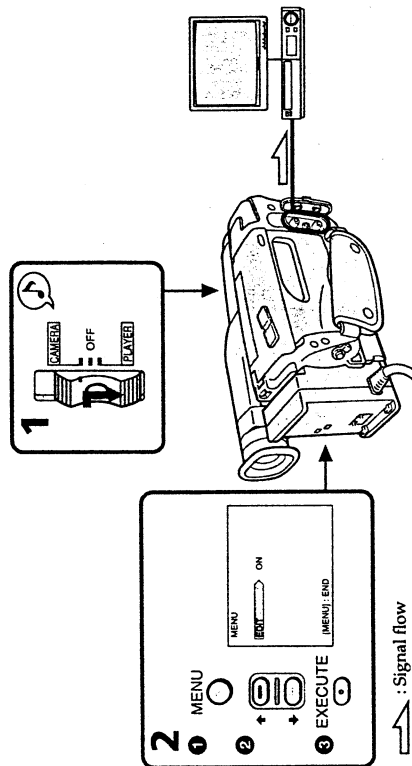
\* These are common names. They may be different from formal country names.

## Editing onto Another Tape

You can create your own video program by editing with any other 8 mm, Hi8, Hi8 VHS, S-VHS, VHS, Hi8 VHS, S-VHS, or Hi8 VHS VCR that has video/audio inputs.

### Before Editing

After connecting the camcorder to the VCR, (1) Slide the POWER switch to PLAYER. (2) Set EDIT mode to ON in the menu system to minimise the picture deterioration (p.25).



### Starting Editing

(1) Insert a blank tape (or a tape you want to record over) into the recording VCR. Then insert your recorded tape into the camcorder. (2) Play back the recorded tape on the camcorder until you locate the point where you want to start editing. Then set the camcorder to playback pause mode. (3) Set the recording VCR to recording pause mode. (4) Press II on the camcorder and VCR simultaneously to start editing.

### To Edit More Scenes

Repeat steps 2 to 4.

### To Stop Editing

Press □ STOP on the camcorder and VCR. When you finish editing, reset EDIT mode to OFF (p.25).

### Use of the EDITSEARCH button

To play back a tape in the forward or reverse direction keep pressing EDITSEARCH during playback pause. You can play back still pictures successively at specific intervals by pressing EDITSEARCH intermittently.

### Note on DISPLAY function

If you have displayed the viewfinder screen indicators on the TV (DISPLAY function), erase the indicators by pressing DISPLAY on the Remote Commander so that they will not be superimposed on the edited tape.

Changing the Mode Settings/Editing onto Another Tape



Table 10-1		Table 10-2	
Year	Population (millions)	Year	Population (millions)
1950	2.5	1980	4.4
1960	3.0	1990	5.3
1970	3.7	2000	6.1
1980	4.4	2010	6.9
1990	5.3	2020	7.6
2000	6.1	2030	8.2
2010	6.9	2040	8.7
2020	7.6	2050	9.1
2030	8.2	2060	9.4
2040	8.7	2070	9.6
2050	9.1	2080	9.7
2060	9.4	2090	9.8
2070	9.6	2100	9.9
2080	9.7		
2090	9.8		
2100	9.9		

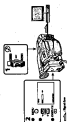
Source: U.S. Census Bureau, "World Population Projections to the Year 2100."

## Editing and the Reader's Eye

The reader's eye is attracted to the center of the page, and then moves to the left and right margins. This is why the center of the page is the most important area for editing.

When editing, the editor should look for the most important information and place it in the center of the page.

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The car is labeled 'Car' and the monitor is labeled 'Monitor'.

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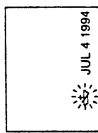
The car is labeled 'Car' and the monitor is labeled 'Monitor'.

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## Additional Information

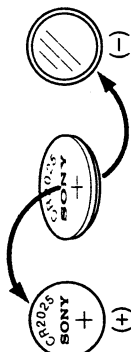
### Changing the Lithium Battery In the Camcorder

Your camcorder is supplied with the lithium battery installed. The lithium battery lasts for about 1 year under normal operation. When the battery becomes weak or dead, the indicator flashes in the viewfinder for about 5 seconds when you set the POWER switch to CAMERA. In this case, **replace the battery with the Sony CR2025 or Duracell DL-2025 lithium battery. Use of another battery may present a risk of fire or explosion.**



#### Note on Lithium Battery

Note that the lithium battery has a positive (+) and a negative (-) terminals as illustrated. **Be sure to install the lithium battery so that terminals on the battery match the terminals on the camcorder.**



#### WARNING

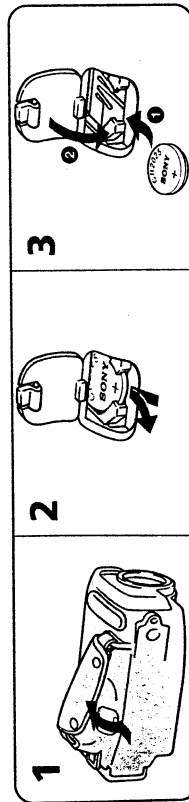
The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

#### Caution

Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.

### Changing the Lithium Battery

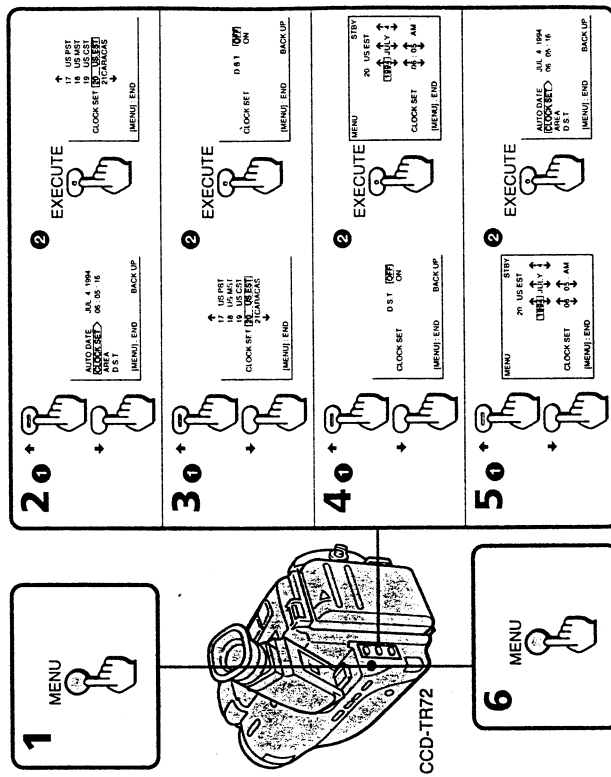
When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time and the other items with BACK UP indicator in the menu system. (1) Open the lid of the lithium battery compartment. (2) Push the battery down once and pull it out from the holder. (3) Install the lithium battery with the positive (+) side facing out. Close the lid of the battery compartment.



## Resetting the Date and Time

Reset the date and time in the menu system.

(1) Press MENU to display the menu. (2) Press  $\uparrow$  or  $\downarrow$  to select CLOCK SET item (p.26). Press EXECUTE. (3) Press  $\uparrow$  or  $\downarrow$  to select the area number where you will use the camcorder. Press EXECUTE. (4) Select D.S.T. ON for Daylight Saving Time or OFF for standard time. Press EXECUTE. (5) Set year, month, day, time, minute by pressing  $\uparrow$ ,  $\downarrow$  and EXECUTE. Note that when you keep  $\uparrow$  and  $\downarrow$  pressed, the digits advance faster. (6) Press MENU to erase the menu display.



Time Zones and Area Numbers and Names  
"S.T." in the following table stands for Standard Time.

Time Zones	Area Name	Area Number
Hawaii S.T.	HAWAII	15
Alaska S.T.	ANCHORAGE	16
Pacific S.T./West Canada	US/PST	17
Mountain S.T.	US/MST	18
Central S.T.	US/CST	19
Eastern S.T./East Canada	US/EST	20

### Labware: Batteries

## Disposing the Lithium Battery in the Camcorder

The camcorder is equipped with lithium battery packs. The lithium battery packs should be removed from the camcorder when the camcorder is not in use for a long period of time. The lithium battery packs should be disposed of properly. Do not dispose of the lithium battery packs in the trash. The lithium battery packs should be disposed of properly. Do not dispose of the lithium battery packs in the trash. The lithium battery packs should be disposed of properly. Do not dispose of the lithium battery packs in the trash.



### How to Dispose of Lithium Battery

How to dispose of lithium battery packs is not simple. It is recommended to dispose of the lithium battery packs in a special container. Do not dispose of the lithium battery packs in the trash. The lithium battery packs should be disposed of properly. Do not dispose of the lithium battery packs in the trash.



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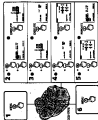
### Disposing the Lithium Battery

The lithium battery packs should be disposed of properly. Do not dispose of the lithium battery packs in the trash. The lithium battery packs should be disposed of properly. Do not dispose of the lithium battery packs in the trash.



## Resetting the Date and Time

The date and time is stored in the camcorder. The date and time should be reset when the camcorder is not in use for a long period of time. The date and time should be reset when the camcorder is not in use for a long period of time. The date and time should be reset when the camcorder is not in use for a long period of time. The date and time should be reset when the camcorder is not in use for a long period of time.



### Resetting the Date and Time

Item	Reset Date	Reset Time	Reset Date	Reset Time
Item 1	1/1/00	12:00	1/1/00	12:00
Item 2	1/1/00	12:00	1/1/00	12:00
Item 3	1/1/00	12:00	1/1/00	12:00
Item 4	1/1/00	12:00	1/1/00	12:00
Item 5	1/1/00	12:00	1/1/00	12:00

## Resetting the Date and Time

### To Correct the Date and Time Setting

Repeat steps 2 to 5.

### To Check the Date and Time

Press DATE to display the date indicator in the viewfinder. Press TIME to display the time indicator. When you press the same button again, the indicator goes out.

### To Reset to Standard Time

Change D.S.T. mode setting in the menu system (p.25).

### The year indicator changes as follows:

1994 ↔ 1995 ↔ 2024

### Note on the time indicator

The internal clock of the camcorder operates on a 12-hour cycle. 12:00:00 AM stands for midnight. 12:00:00 PM stands for noon.

## Playback Modes

The playback mode is selected automatically according to the recording system (SP/LP mode) in which the tape was recorded.

### Notes on AFM Hi-Fi stereo — For stereo models (CCD-TR72/TR80)

When you play back the tape, the sound is in monaural if:

- You record the tape using this camcorder, then play it back on an AFM Hi-Fi monaural video recorder/player.
- You record the tape on an AFM Hi-Fi monaural video recorder, then play it back on this camcorder.

### LP (long play) mode

When you play back a tape recorded in LP mode, the LP indicator lights up in the viewfinder. This camcorder cannot record tape in LP mode.

### Foreign 8 mm video

You cannot play software recorded on a different TV color system. Because the TV color systems differ from country to country, you may not be able to play back foreign pre-recorded software. Refer to page 39 to check the TV color system of foreign countries.

## Tips for Using the Battery Pack

This section shows you how you can get the most out of your battery pack.

### Preparing the Battery Pack

#### Always Carry Additional Batteries

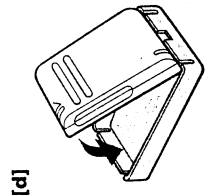
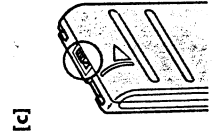
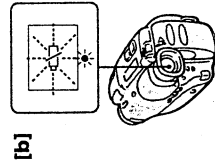
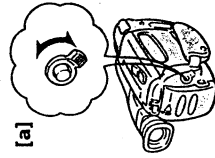
Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

#### Battery Life is Shorter in Cold Environment

Battery efficiency is decreased and the battery will be used up more quickly if you are recording in cold environment.

#### To Save Battery Power

Turn the STANDBY switch on the camcorder down when not recording to save battery power. [a] A smooth transition between scenes can be made even if recording is stopped and started again. While positioning the subject, selecting an angle, or looking through the viewfinder lens, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.







## Tips for Using the Battery Pack

### When to Replace the Battery Pack

While you are using your camcorder, the remaining battery indicator decreases gradually as battery power is used up.



When the remaining battery indicator reaches the lowest point, the **i** indicator appears and starts flashing in the viewfinder. [b] on page 33.

When the **CL** indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, slide the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain smooth transition between scenes after the battery pack is replaced.

#### Note on the remaining battery indicator

The remaining battery indicator of the camcorder may indicate a different remaining capacity from that of the battery pack with the remaining battery indicator (not supplied). The indicator of the battery pack is more accurate.

### Notes on the Rechargeable Battery Pack

#### The Battery Heats Up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern.

#### Battery Care

- Remove the battery pack from the camcorder after using the battery pack, and keep it in a cool place. When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF, which shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery right before using the camcorder.

#### How to Use the Switch on the Battery Pack

This switch is provided so that you can mark the charged battery. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up (or in whichever direction you want to remind yourself). [c] on page 33.

#### The Life of the Battery Pack

The battery pack can be fully charged and discharged about 500 times under normal temperatures. If the **CL** indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

#### Charging Temperature

You should charge batteries at temperatures from 50°F to 86°F (from 10°C to 30°C). Lower temperatures require a longer charging time.

### Notes on Charging

#### A Brand-new Battery

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

#### Before Recharging a Used Battery Pack

- Make sure to use up the battery before recharging.
- If recording is completed before the **CL** indicator appears in the viewfinder, you should remove the tape, slide the POWER switch to CAMERA, turn STANDBY up, and leave the camcorder until the battery indicator flashes rapidly.
- When you use the AC-S10 power adaptor, you can use the discharging function.
- **Charging the usable battery causes a lowering of battery capacity. Battery capacity can be recovered if you fully discharge and charge the battery again.**

#### After Long Storage

Recharge the battery pack after a long period of storage. If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged. Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

### Notes on the Terminals

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened.

When the terminals are not clean or when the battery pack has not been used for a long time, repeat installing and removing the battery pack. This improves the contact condition. Also, wipe the + and - terminals with a soft cloth or paper.

#### Be Sure to Observe the Following

- **To prevent an accident caused by a short circuit, do not allow metal objects such as a necklace to touch the battery terminals. Carry the battery pack attaching to the terminal cover. [d] on page 33.**
- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor convert the battery pack.
- Do not expose the battery pack to any mechanical shock.

1. **Introduction**



1. The first step in the process is to identify the problem or issue that needs to be addressed. This involves gathering information and understanding the context of the problem.

the 1990s, the number of people in the United States who are 65 years of age or older is projected to increase from 20 million to 35 million, and the number of people 75 years of age or older is projected to increase from 10 million to 15 million (U.S. Census Bureau, 1996). The number of people 85 years of age or older is projected to increase from 2 million to 4 million (U.S. Census Bureau, 1996). The number of people 90 years of age or older is projected to increase from 500,000 to 1 million (U.S. Census Bureau, 1996). The number of people 95 years of age or older is projected to increase from 100,000 to 200,000 (U.S. Census Bureau, 1996). The number of people 100 years of age or older is projected to increase from 10,000 to 20,000 (U.S. Census Bureau, 1996).

100

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

[illegible][illegible]

These results suggest that the use of a single, non-validated questionnaire may not be sufficient to accurately measure the prevalence of mental health problems in the community. The use of multiple, validated questionnaires, such as the GHQ-12 and the PHQ-9, may provide a more comprehensive assessment of mental health status.

# THE

1. **Introduction**

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

[illegible]

the 1990s, the number of people in the United States who are 65 years of age or older is projected to increase from 20 million to 35 million, and the number of people 75 years of age or older is projected to increase from 10 million to 15 million (U.S. Census Bureau, 1996). The number of people 85 years of age or older is projected to increase from 2 million to 4 million (U.S. Census Bureau, 1996). The number of people 90 years of age or older is projected to increase from 500,000 to 1 million (U.S. Census Bureau, 1996). The number of people 95 years of age or older is projected to increase from 100,000 to 200,000 (U.S. Census Bureau, 1996). The number of people 100 years of age or older is projected to increase from 10,000 to 20,000 (U.S. Census Bureau, 1996).

**Journal of Interpersonal Violence 26(12)**

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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## Maintenance Information and Precautions

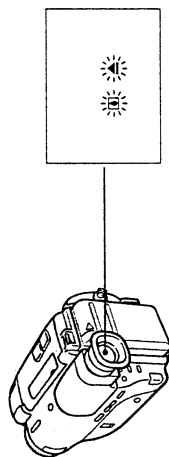
### Moisture Condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. If this happens, the tape may stick to the head drum and be damaged or the camcorder may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. However, take the following precautions.

#### Inside the Camcorder

When **[E]** and **[A]** indicators flash in the viewfinder, moisture has condensed inside the camcorder. If this happens, none of the functions except cassette ejection will work. **Eject the cassette turn off the camcorder, and leave it with the cassette compartment open for about 1 hour.**

If the **[E]** indicator does not light up when you turn on the power, you can use the camcorder again.



#### On the Surface of the Tape

If there is moisture on the surface of the tape, when you insert cassette and press a tape transport button (▶ **PLAY**, etc.), the **[A]** indicator flashes in the viewfinder. If this happens, none of the functions except cassette ejection will work.

**Eject the cassette and leave it for about 1 hour.**

If the **[A]** indicator does not light up when you insert the cassette and press a tape transport button, you can use the camcorder again.

#### On the Lens

No indicator will appear, but the picture becomes dim. Turn off the power and do not use the camcorder for about 1 hour.

#### How to Prevent Moisture Condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

- (1) Be sure to tightly seal the plastic bag containing the camcorder.
- (2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about one hour).

### Video Head Cleaning

To ensure clear pictures, clean the video heads periodically. When playback pictures are "noisy" or hardly visible, the video heads may be contaminated.



[a] → [b]

[a] Slight contamination

[b] Critical contamination  
If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied). After checking the picture, if it is still "noisy", repeat the cleaning. (Do not repeat cleaning more than 5 times.)

#### Caution

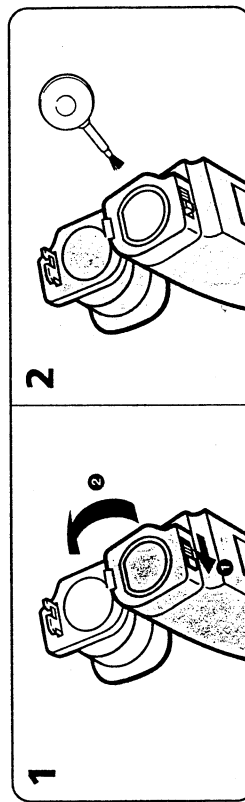
Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

#### Note

If the V8-25CLH cleaning cassette is not available in your area, consult your nearest Sony dealer.

### Removing Dust from inside the Viewfinder

- (1) While sliding the viewfinder release knob to the left, flip open the viewfinder. (2) Clean the surface with a commercially available blower.





## Maintenance Information and Precautions

### Precautions

#### Camcorder Operation

- Operate the camcorder using 6.0 V (battery pack), or 7.5 V (AC power adaptor).
- For DC or AC operation, use only the accessories recommended in this manual.
- Should any solid object or liquid fall into the casing, unplug the camcorder and have it checked by your nearest Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camera.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.

#### On Handling Tapes

Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type, thickness of tape, or if the tab is out or in.

#### Camcorder Care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera and player sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

#### AC Power Adaptor

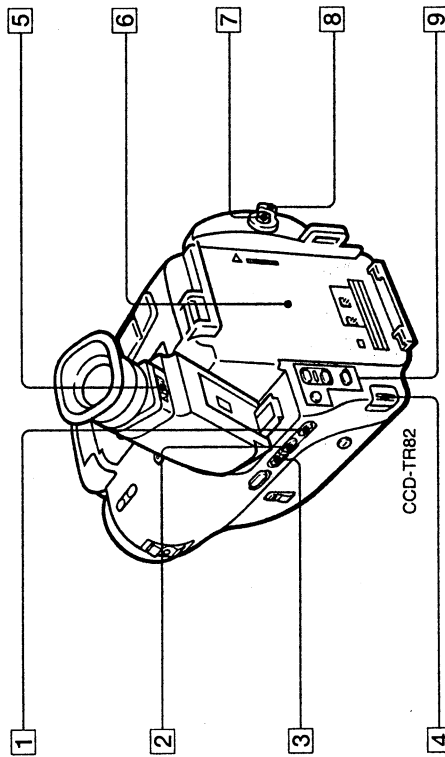
- Use only for the specified battery pack. This unit cannot be used to charge an NP-500 series battery pack.
- Attach the battery pack firmly.
- Charge the battery pack on a flat surface without vibration.

#### Others

- The model for USA or Canada: One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
  - Unplug the unit from the wall (mains) outlet when not in use for a long time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
  - Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
  - Do not bend the AC power cord forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.
  - Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
  - Always keep the metal contacts clean.
  - Do not disassemble the unit.
  - Do not apply mechanical shock or drop the unit.
  - While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
  - The unit becomes warm while in use. This is normal.
  - Do not place the unit in locations that are:
    - Extremely hot or cold
    - Dusty or dirty
    - Very humid
    - Vibrating
- If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

## Identifying the Parts

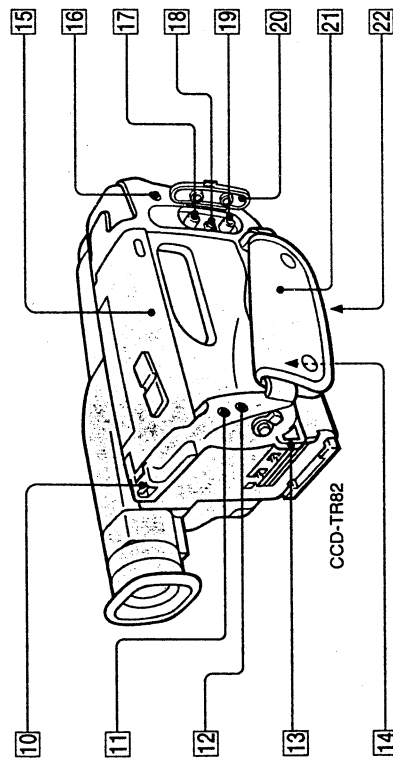
The illustrations in this section are of CCD-TR82.



- |                                     |                                      |
|-------------------------------------|--------------------------------------|
| 1 COUNTER RESET button (p.12)       | 5 Viewfinder release knob (p.14, 37) |
| 2 TIME button (p.20)                | 6 Battery mounting surface (p.8)     |
| 3 DATE button (p.20)                | 7 START/STOP button (p.11)           |
| 4 BATT (battery) release knob (p.8) | 8 STANDBY switch (p.10, 11)          |
|                                     | 9 Menu operation buttons (p.25, 31)  |



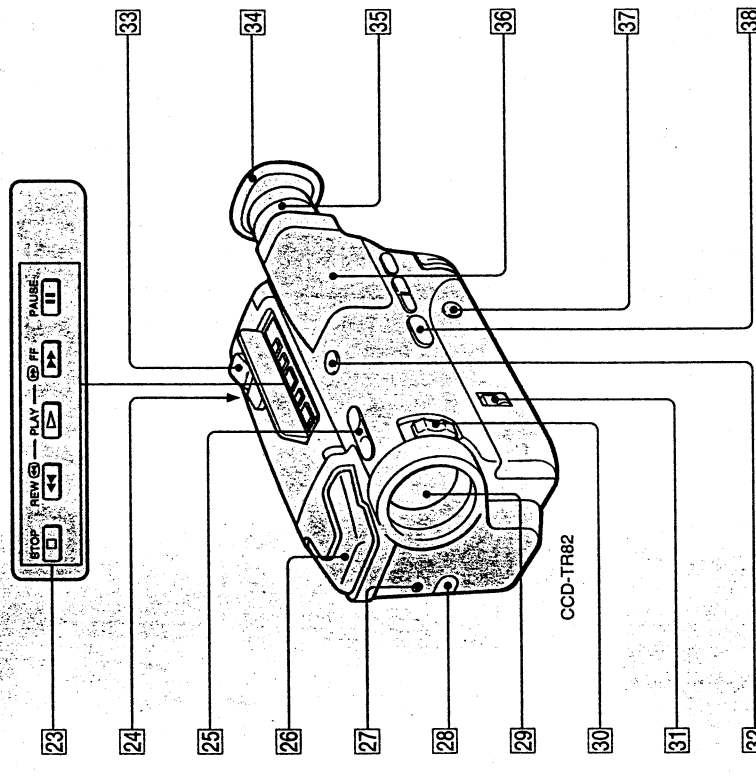
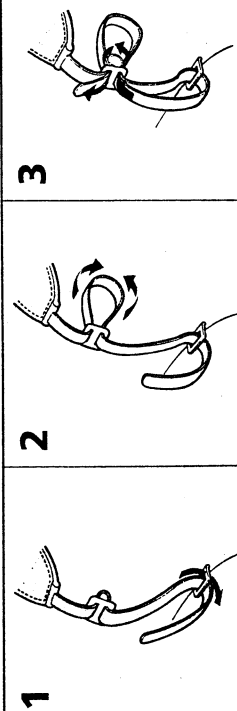
## Identifying the Parts



- 10** Hook for shoulder strap (below)
- 11** LANC  $\square$  control jack  
Connect the LANC  $\square$  connecting cable to a wired remote control unit such as an editing controller. In this case, set the COMMANDER mode to OFF in the menu system (p.25).  
 $\square$  stands for Local Application Control Bus system. The  $\square$  control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the connectors indicated as CONTROL L or REMOTE.
- 12**  $\square$  (earphone) jack (CCD-TR42/TR70/TR82) (p.15)  
 $\square$  (headphones) jack (CCD-TR72/TR80) (p.15)
- 13** Hook for shoulder strap (below)
- 14** Lithium battery compartment (p.30)
- 15** Cassette compartment lid (p.9)
- 16** MIC (microphone) jack
- 17** VIDEO jack (p.16)
- 18** RFU DC OUT (RFU adaptor DC out) jack (p.16)
- 19** AUDIO jack (p.16)
- 20** Jack cover
- 21** Grip strap (p.14)
- 22** Tripod receptacle (p.14)  
Attach a tripod (not supplied) here. When attaching a non-Sony tripod, make sure that the length of the camera mounting screw is shorter than 9/32 inches (6.5 mm). Otherwise, the screw might damage the inner part of the camcorder.

### Attaching the shoulder strap

Attach the supplied shoulder strap to the hooks for the shoulder strap (10, 13).



- 23** Tape transport buttons (p.17)  
■ STOP  
◀◀ REW (rewind)  
▶▶ PLAY (playback)  
▶▶ FF (fast forward)  
|| PAUSE  
These buttons will function in PLAYER mode.
- 24** EJECT button (p.9)
- 25** EDIT/SEARCH button (p.15)
- 26** Built-in microphone
- 27** Camera recording/battery lamp
- 28** Remote sensor (p.49)
- 29** Lens cover
- 30** POWER switch (p.10, 11)
- 31** STEADY SHOT switch (p.24)
- 32** FADER button (p.23)
- 33** POWER ZOOM button (p.13)
- 34** Eyecup (p.14)
- 35** Viewfinder adjustment ring (p.10)
- 36** Viewfinder (p.10, 14)
- 37** BACK LIGHT button (p.21)
- 38** PROGRAM AE button (p.22)

# Identify parts (No. 1-11)



1. Head for cylinder (No. 1-2)
2. Head for cylinder (No. 3-4)
3. Head for cylinder (No. 5-6)
4. Head for cylinder (No. 7-8)
5. Head for cylinder (No. 9-10)
6. Head for cylinder (No. 11-12)
7. Head for cylinder (No. 13-14)
8. Head for cylinder (No. 15-16)
9. Head for cylinder (No. 17-18)
10. Head for cylinder (No. 19-20)
11. Head for cylinder (No. 21-22)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

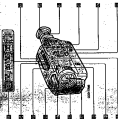
Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)



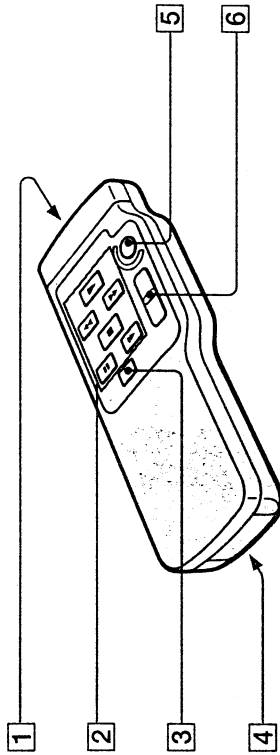
1. Head for cylinder (No. 1-2)
2. Head for cylinder (No. 3-4)
3. Head for cylinder (No. 5-6)
4. Head for cylinder (No. 7-8)
5. Head for cylinder (No. 9-10)
6. Head for cylinder (No. 11-12)
7. Head for cylinder (No. 13-14)
8. Head for cylinder (No. 15-16)
9. Head for cylinder (No. 17-18)
10. Head for cylinder (No. 19-20)
11. Head for cylinder (No. 21-22)



## Identifying the Parts

### Remote Commander

The buttons that have the same name on the Remote Commander and on the camcorder function identically.



**1 Transmitter (p.49)**

Point toward the remote sensor to control the camcorder after turning on the POWER switch on the camcorder.

**2 Tape transport buttons (p.17)**

The zooming speed is unchangeable on the Remote Commander.

**3 DISPLAY button (p.18)**

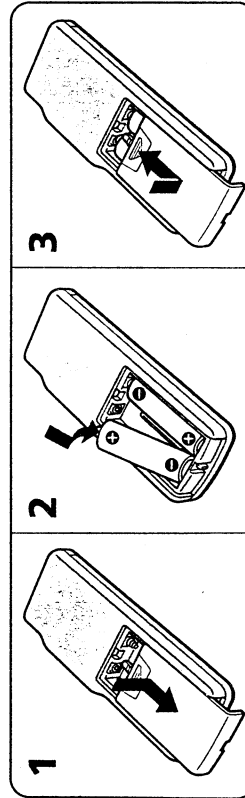
**4 Size AA (R6) battery holder**

**5 START/STOP button**

**6 Power zoom button**

### Preparing the Remote Commander

To use the Remote Commander, you must insert two size AA (R6) batteries. Use the supplied size AA (R6) batteries. (1) Remove the battery cover from the Remote Commander. (2) Insert both of the size AA (R6) batteries with correct polarity. (3) Put the battery cover back onto the Remote Commander.



### Note on battery life

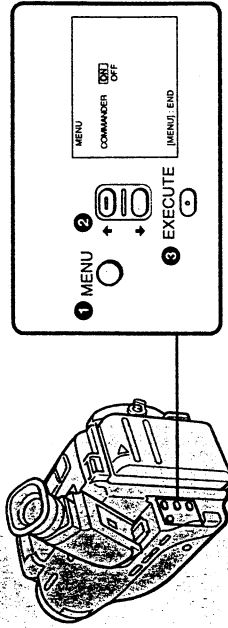
The batteries for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

### To avoid damage from possible battery leakage

Remove the batteries when you will not use the Remote Commander for a long time.

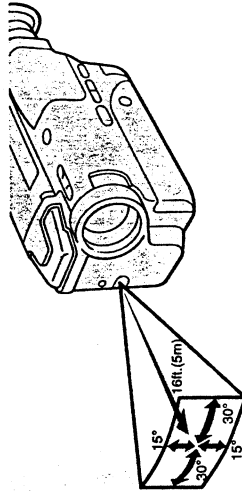
### Using the Remote Commander

Make sure that the COMMANDER mode is set to ON in the menu system (p.25).



### Remote Control Direction

Aim the Remote Commander to the remote sensor within the range as shown below.



### Notes on the Remote Commander

- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor and the Remote Commander.
- This camcorder works at commander mode VTR 2. The commander modes (1, 2, and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR at commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

## Identifying the Parts

### Identifying the Parts of the Remote Control

Look at the diagram of the remote control. Label the parts of the remote control with the numbers 1 through 5.



1. The top button is the **power** button. It is used to turn the remote control on or off.
2. The bottom button is the **stop** button. It is used to stop the remote control from working.
3. The left side button is the **channel** button. It is used to change the channel of the remote control.
4. The right side button is the **volume** button. It is used to change the volume of the remote control.
5. The bottom of the remote control is the **battery** compartment. It is used to insert the batteries.

Now that you have identified the parts of the remote control, you can use it to control the television. Remember to always use the remote control correctly to avoid any problems.



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### Identifying the Parts of the Remote Control

Look at the diagram of the remote control. Label the parts of the remote control with the numbers 1 through 5.



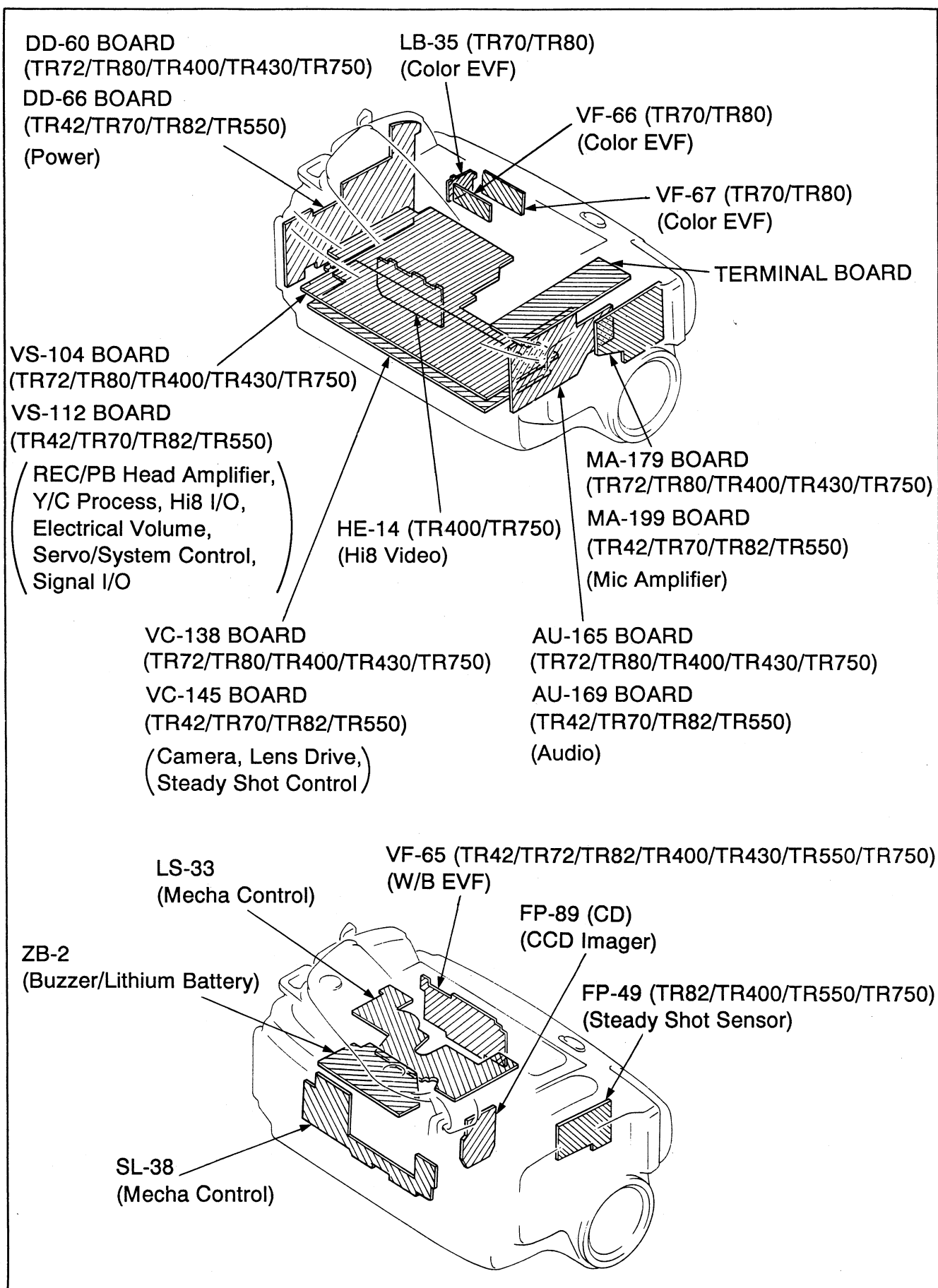
### Identifying the Parts of the Remote Control



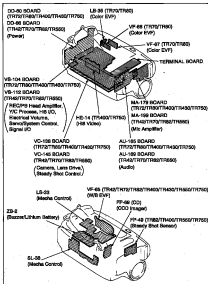
### Identifying the Parts of the Remote Control

Now that you have identified the parts of the remote control, you can use it to control the television. Remember to always use the remote control correctly to avoid any problems.

## 2-14. CIRCUIT BOARDS LOCATION



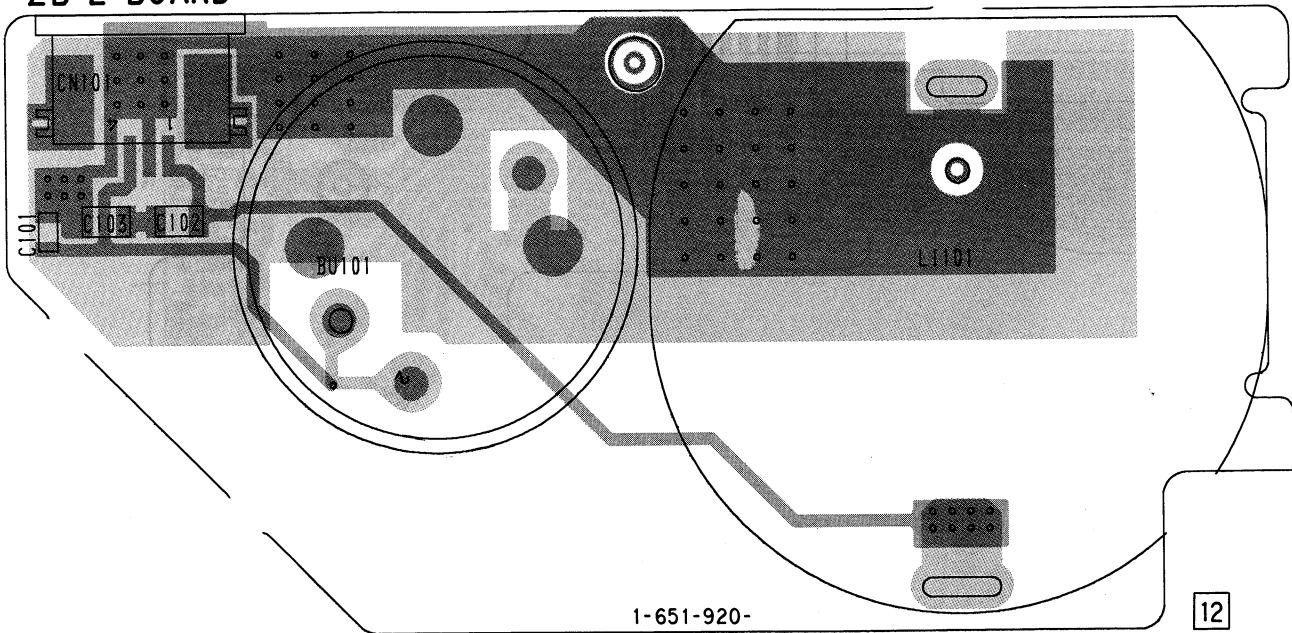
## 2-14. CIRCUIT BOARD LOCATION



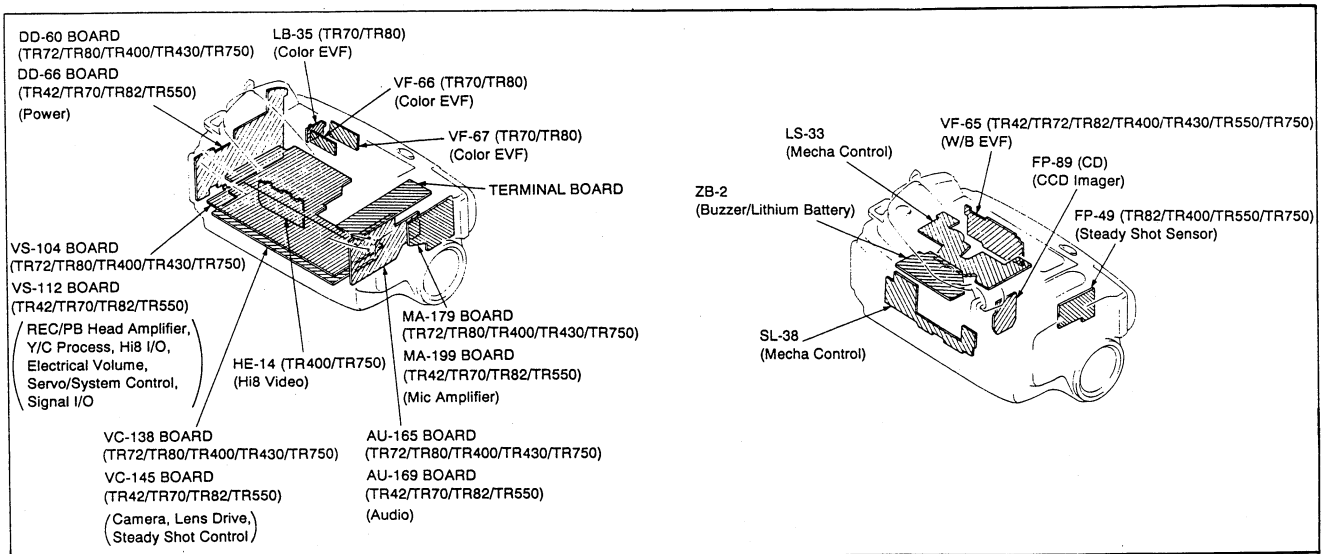
## ZB-2 (BUZZER/LITHIUM BATTERY) PRINTED WIRING BOARD

— Ref. No. ZB-2 BOARD: 4000 series —

### ZB-2 BOARD



- For printed wiring board of ZB-2 board.
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.



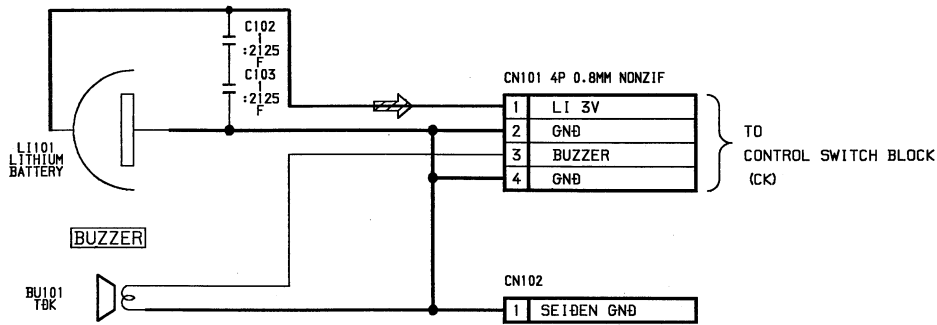


ZB-2 (BUZZER/LITHIUM BATTERY) SCHEMATIC DIAGRAM

— Ref. No. ZB-2 BOARD: 4000 series —

ZB-2 BOARD

•CONTROL SWITCH BLOCK (CK)  
Is replaced as a block, so that there  
SCHEMATIC DIAGRAM  
PRINTED WIRING BOARD  
is omitted.



09

ZB-2 (NICKEL-CADMIUM BATTERY) SCHEMATIC DIAGRAM

— Ref. No. ZB-2 (CCD-400) 400 series —

ZB-2 BOARD

CONTROL SWITCH BLADE, 600  
IN. INTERLOCK IN 2.0000 IN. FEET (0.000)  
CONTROL TO BATTERY  
POWERED BATTERY (0.000)  
IN. 100.000

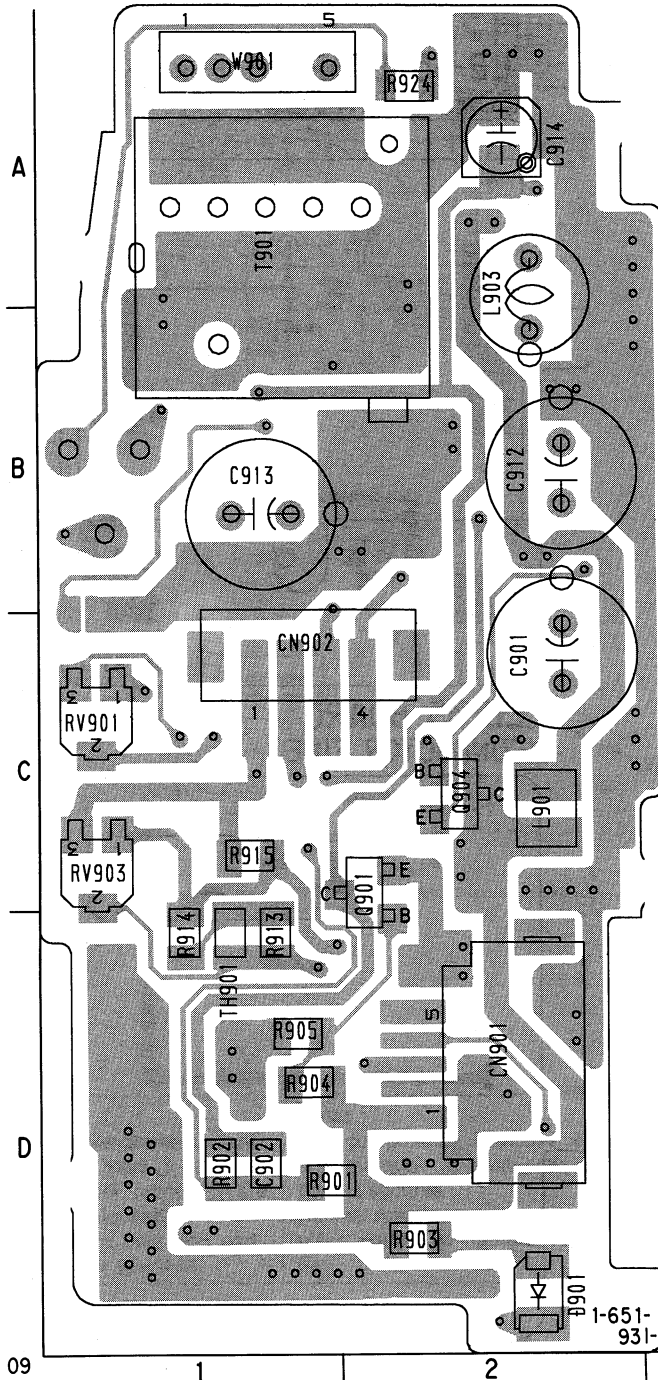




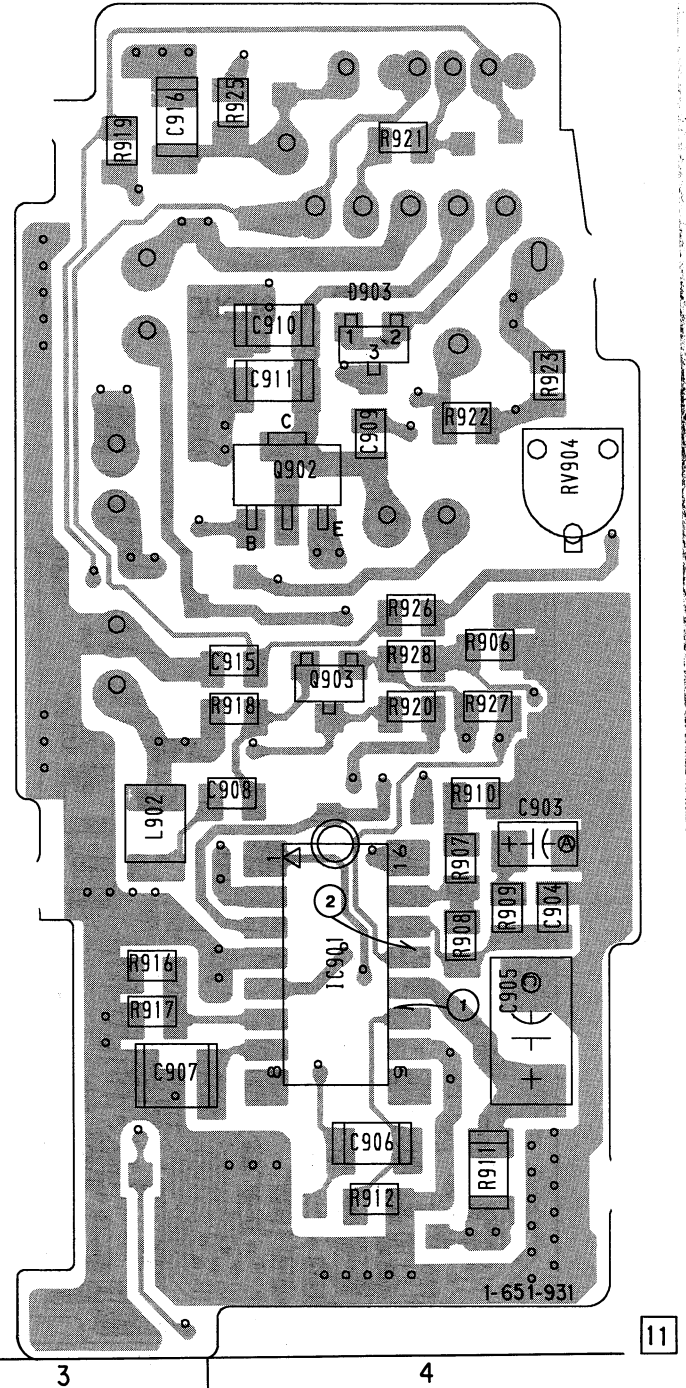
# VF-65 (W/B EVF) PRINTED WIRING BOARD (TR42/TR72/TR82/TR400/TR430/TR550/TR750)

— Ref. No. VF-65 BOARD: 8000 series —

## VF-65 BOARD (COMPONENT SIDE)



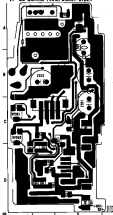
## VF-65 BOARD (CONDUCTOR SIDE)



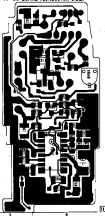
- For printed wiring boards.
- VF-65 board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

— SEE ALSO VF-65 BOARD EXPLAINS —

VF-65 BOARD (COMPONENT SIDE)



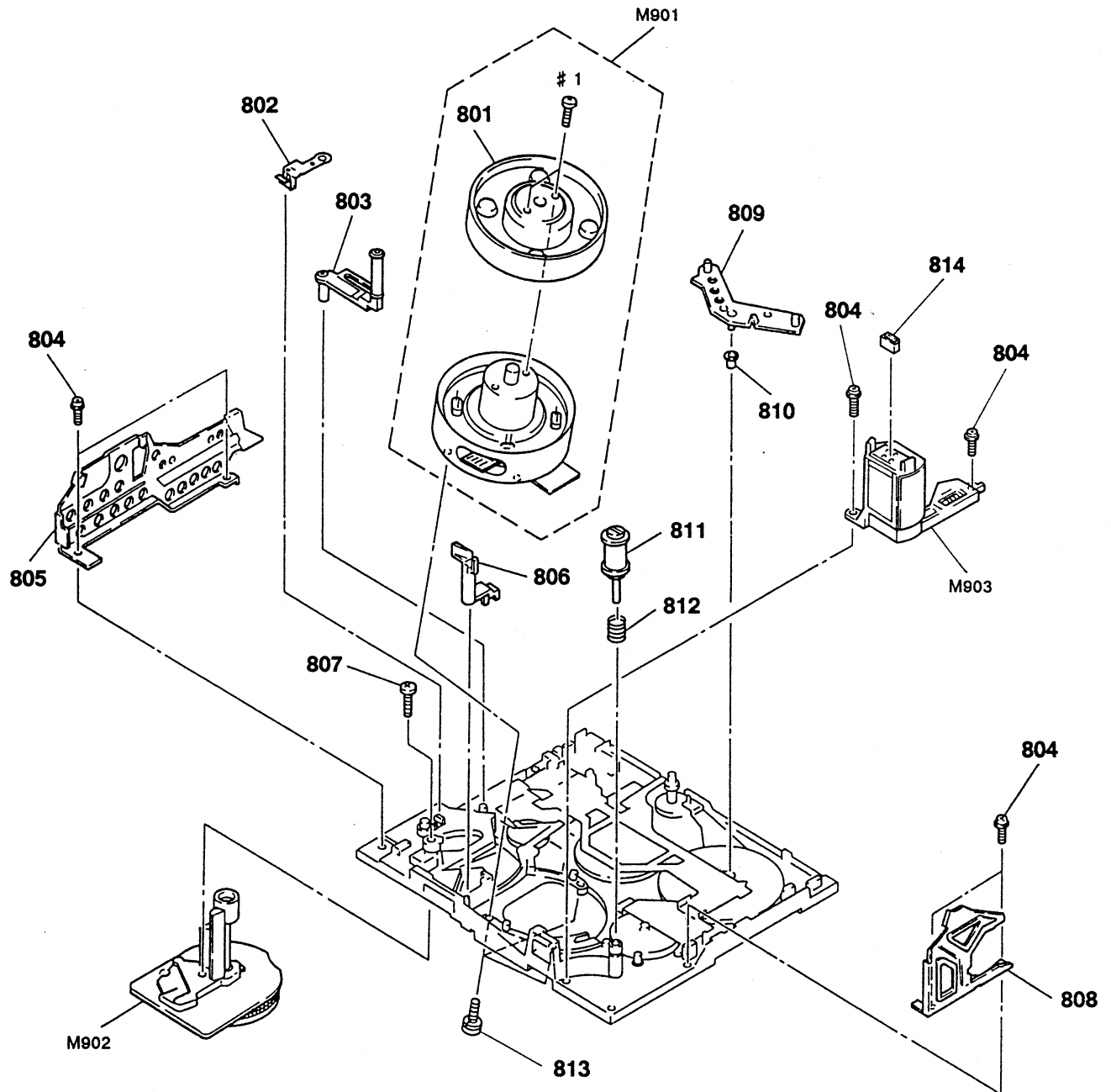
VF-65 BOARD (CONDUCTOR SIDE)



• For detailed wiring details.

• of the board is a four-layer printed board. However, the pattern of layers (1 to 4) are not shown in the diagram.

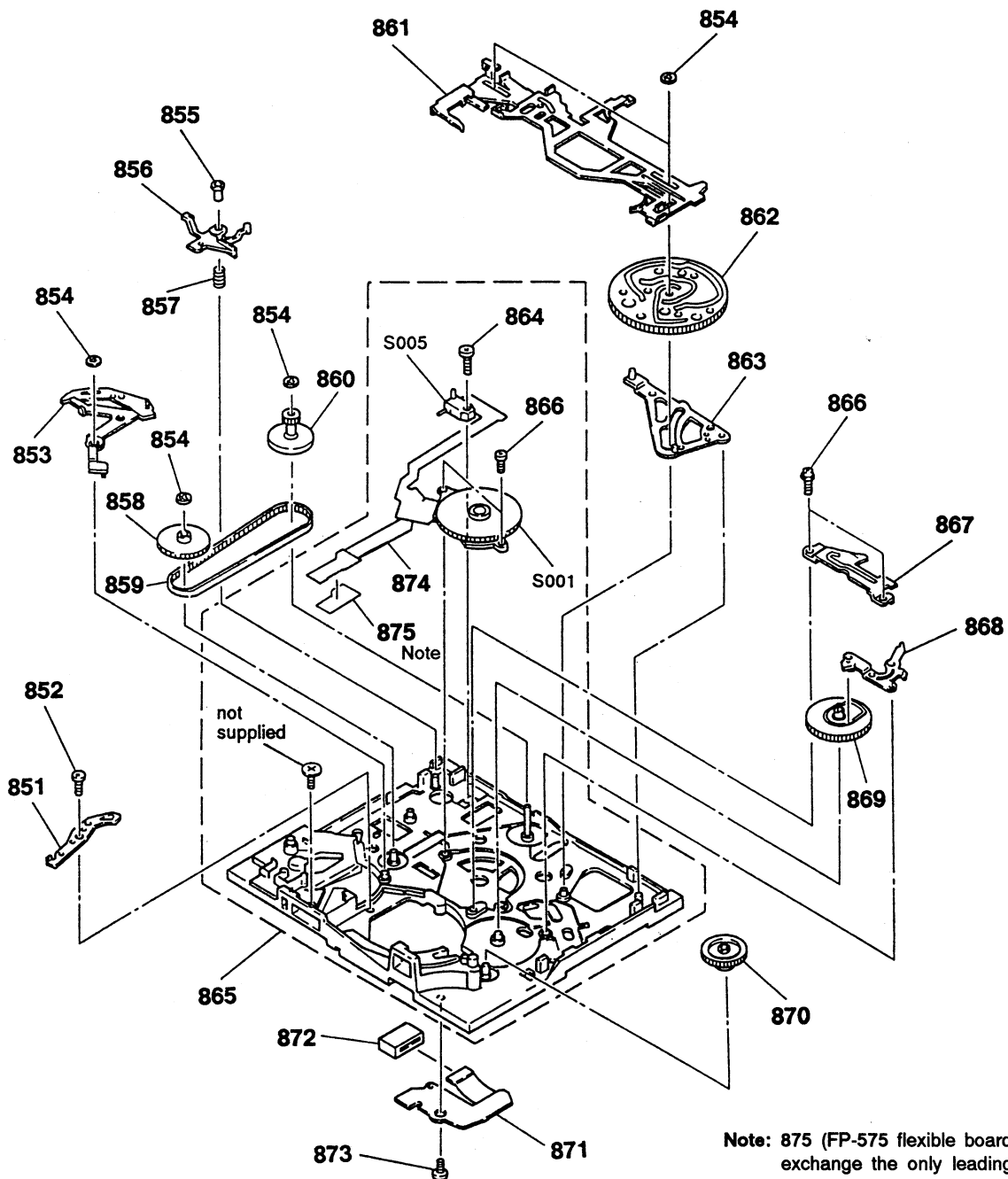
# 5-1-10. MECHANISM CHASSIS ASSEMBLY (1)



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
801	A-7049-501-A	DRUM ASSY, UPPER (DGR-78-R) (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		810	3-945-702-01	ROLLER, LS	
801	A-7049-567-A	DRUM ASSY, UPPER (DGR-92-R) (TR400/TR750)		811	X-3941-262-1	ROLLER ASSY, TG2	
802	3-945-822-01	SPRING, LEAF, TG7 ARM		812	3-956-651-01	SPRING, COMPRESSION	
803	A-7040-305-A	ARM BLOCK ASSY, TG7		813	3-686-493-01	SCREW (M2X5), P1	
804	3-947-503-01	SCREW (M1.4X2.5)		814	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P	
805	X-3941-255-1	PLATE (T) ASSY, SIDE		M901	A-7048-564-A	DRUM ASSY (DGH-78A-R) (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
806	3-945-735-01	ARM, HC CONVERSION		M901	A-7048-633-A	DRUM ASSY (DGH-92A-R) (TR400/TR750)	
807	3-713-786-71	SCREW (M2X5)		M902	8-835-477-12	MOTOR, DC SCE-0101A (CAPSTAN)	
808	3-945-691-01	PLATE (S), SIDE		M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	
809	3-945-701-01	ARM, LS					



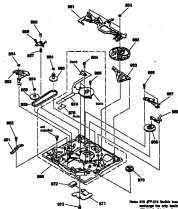
# 5-1-11. MECHANISM CHASSIS ASSEMBLY (2)



Note: 875 (FP-575 flexible board) is part that exchange the only leading part of 874 (FP-442 flexible board).

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
851	3-945-734-01	ARM, HC DRIVING		865	A-7040-303-A	CHASSIS ASSY, MECHANICAL	
852	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD		866	3-947-503-01	SCREW (M1.4X2.5)	
853	X-3941-259-1	ARM ASSY, PINCH PRESS		867	3-945-722-01	RETAINER, GEAR	
854	3-726-829-01	WASHER, STOPPER		868	X-3941-257-1	ARM ASSY, FF	
855	3-945-730-01	SLEEVE, EJECT		869	3-945-697-01	GEAR (B), L	
856	3-945-706-01	LEVER, EJECT		870	3-945-700-01	GEAR (A), L	
857	3-945-729-01	SPRING, COMPRESSION		871	1-641-643-12	FP-444 FLEXIBLE BOARD	
858	X-3941-256-1	GEAR ASSY, CHANGE		872	1-691-254-13	CONNECTOR, TRANSLATION 10P	
859	3-944-539-01	BELT, RELAY		873	3-945-756-01	SCREW (M1.4X3)	
860	3-945-695-01	PULLEY, RELAY		874	1-641-639-13	FP-442 FLEXIBLE BOARD	
861	X-3941-260-1	SLIDER ASSY, M		875	1-645-271-11	FP-575 FLEXIBLE BOARD	
862	3-945-696-02	CAM		S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
863	X-3941-258-1	ARM ASSY, GL		S005	1-570-771-21	SWITCH (C DOWN)	
864	3-713-786-71	SCREW (M2X5)					

# 5-4-11. RECOIL SPRING CHAMBER ASSEMBLY (2)



Ref. No.	Part No.	Description	QTY.
1	1-100-100-1	RECOIL SPRING CHAMBER ASSEMBLY (2)	1
2	2-100-100-1	RECOIL SPRING	1
3	3-100-100-1	GUIDE PIN	1
4	4-100-100-1	GUIDE BUSH	1
5	5-100-100-1	GUIDE SLEEVE	1
6	6-100-100-1	GUIDE NUT	1
7	7-100-100-1	GUIDE WASHER	1
8	8-100-100-1	GUIDE PIN	1
9	9-100-100-1	GUIDE BUSH	1
10	10-100-100-1	GUIDE SLEEVE	1
11	11-100-100-1	GUIDE NUT	1
12	12-100-100-1	GUIDE WASHER	1
13	13-100-100-1	GUIDE PIN	1
14	14-100-100-1	GUIDE BUSH	1
15	15-100-100-1	GUIDE SLEEVE	1
16	16-100-100-1	GUIDE NUT	1
17	17-100-100-1	GUIDE WASHER	1
18	18-100-100-1	GUIDE PIN	1
19	19-100-100-1	GUIDE BUSH	1
20	20-100-100-1	GUIDE SLEEVE	1
21	21-100-100-1	GUIDE NUT	1
22	22-100-100-1	GUIDE WASHER	1
23	23-100-100-1	GUIDE PIN	1
24	24-100-100-1	GUIDE BUSH	1
25	25-100-100-1	GUIDE SLEEVE	1
26	26-100-100-1	GUIDE NUT	1
27	27-100-100-1	GUIDE WASHER	1

Ref. No.	Part No.	Description	QTY.
1	1-100-100-1	RECOIL SPRING CHAMBER ASSEMBLY (2)	1
2	2-100-100-1	RECOIL SPRING	1
3	3-100-100-1	GUIDE PIN	1
4	4-100-100-1	GUIDE BUSH	1
5	5-100-100-1	GUIDE SLEEVE	1
6	6-100-100-1	GUIDE NUT	1
7	7-100-100-1	GUIDE WASHER	1
8	8-100-100-1	GUIDE PIN	1
9	9-100-100-1	GUIDE BUSH	1
10	10-100-100-1	GUIDE SLEEVE	1
11	11-100-100-1	GUIDE NUT	1
12	12-100-100-1	GUIDE WASHER	1
13	13-100-100-1	GUIDE PIN	1
14	14-100-100-1	GUIDE BUSH	1
15	15-100-100-1	GUIDE SLEEVE	1
16	16-100-100-1	GUIDE NUT	1
17	17-100-100-1	GUIDE WASHER	1
18	18-100-100-1	GUIDE PIN	1
19	19-100-100-1	GUIDE BUSH	1
20	20-100-100-1	GUIDE SLEEVE	1
21	21-100-100-1	GUIDE NUT	1
22	22-100-100-1	GUIDE WASHER	1
23	23-100-100-1	GUIDE PIN	1
24	24-100-100-1	GUIDE BUSH	1
25	25-100-100-1	GUIDE SLEEVE	1
26	26-100-100-1	GUIDE NUT	1
27	27-100-100-1	GUIDE WASHER	1

# AU-165

## 5-2. ELECTRICAL PARTS LIST

### NOTE:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable
- Hardware (# mark) list is given in the last of this parts list.
- Canadian model is abbreviated as CND.

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$  A..., uPA...:  $\mu$  PA...,  
uPB...:  $\mu$  PB..., uPC...:  $\mu$  PC...,  
uPD...:  $\mu$  PD...
- CAPACITORS  
uF:  $\mu$  F
- COILS  
uH:  $\mu$  H

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-7063-958-A	AU-165 BOARD, COMPLETE ***** (TR72/TR80/TR400/TR430/TR750) (Ref. No. 10, 000 Series)		C1345	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V
		< CAPACITOR >		C1346	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1302	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C1347	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1303	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	C1348	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1304	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	C1349	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1305	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	C1350	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1306	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1352	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1307	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1353	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1308	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	C1355	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1309	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1356	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C1310	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1357	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C1311	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1358	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1312	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1359	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1313	1-162-953-11	CERAMIC CHIP 100PF 5%	50V	C1360	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1314	1-162-953-11	CERAMIC CHIP 100PF 5%	50V	C1361	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1315	1-126-209-11	ELECT 100uF 20%	4V	C1362	1-162-969-11	CERAMIC CHIP 0.0068uF 10%	25V
C1316	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V	C1363	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1318	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	C1364	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1319	1-162-953-11	CERAMIC CHIP 100PF 5%	50V			< CONNECTOR >	
C1321	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	CN1301	1-691-490-21	CONNECTOR, FFC/FPC 11P	
C1323	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	*	CN1302	1-691-933-11	CONNECTOR, BOARD TO BOARD 34P
C1326	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V			< DIODE >	
C1327	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	D1302	8-719-404-46	DIODE MA110	
C1328	1-135-091-21	TANTAL. CHIP 1uF 20%	16V	D1303	8-719-045-87	DIODE MA4Z082WA-TX	
C1329	1-135-091-21	TANTAL. CHIP 1uF 20%	16V	D1304	8-719-045-87	DIODE MA4Z082WA-TX	
C1330	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V			< FILTER >	
C1331	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V	FL402	1-236-838-21	FILTER, BAND PASS (1.7MHz)	
C1332	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	FL1302	1-236-837-21	FILTER, BAND PASS (1.5MHz)	
C1333	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V			< IC >	
C1334	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	IC402	8-759-234-77	IC TC4S66F	
C1335	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	IC1301	8-759-159-94	IC LA7491W-TBM	
C1336	1-135-148-21	TANTAL. CHIP 1.5uF 20%	10V			< TRANSISTOR >	
C1337	1-135-148-21	TANTAL. CHIP 1.5uF 20%	10V	Q1301	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1338	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1302	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1339	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1303	8-729-403-35	TRANSISTOR UN5113	
C1340	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1305	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1341	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1306	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1343	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C1344	1-164-346-11	CERAMIC CHIP 1uF 16V					





Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q1311	8-729-230-63	TRANSISTOR	2SC4116-YG	R1355	1-216-833-11	METAL CHIP	10K 5% 1/16W
Q1312	8-729-402-42	TRANSISTOR	UN5213	R1356	1-216-833-11	METAL CHIP	10K 5% 1/16W
Q1313	8-729-403-35	TRANSISTOR	UN5113	R1357	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
Q1315	8-729-402-42	TRANSISTOR	UN5213				
Q1316	8-729-230-63	TRANSISTOR	2SC4116-YG	R1358	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
				R1359	1-216-826-11	METAL CHIP	2.7K 5% 1/16W
Q1317	8-729-230-63	TRANSISTOR	2SC4116-YG	R1360	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
Q1318	8-729-402-81	TRANSISTOR	XN4501	R1361	1-216-836-11	METAL CHIP	18K 5% 1/16W
Q1319	8-729-402-81	TRANSISTOR	XN4501	R1362	1-216-837-11	METAL CHIP	22K 5% 1/16W
Q1320	8-729-230-63	TRANSISTOR	2SC4116-YG				
Q1321	8-729-420-12	TRANSISTOR	XN4213	R1363	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
				R1364	1-216-826-11	METAL CHIP	2.7K 5% 1/16W
Q1322	8-729-420-12	TRANSISTOR	XN4213	R1365	1-216-821-11	METAL CHIP	1K 5% 1/16W
		< RESISTOR >		R1366	1-216-821-11	METAL CHIP	1K 5% 1/16W
				R1367	1-216-821-11	METAL CHIP	1K 5% 1/16W
R1301	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R1368	1-216-821-11	METAL CHIP	1K 5% 1/16W
R1302	1-216-841-11	METAL CHIP	47K 5% 1/16W	R1369	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R1303	1-216-831-11	METAL CHIP	6.8K 5% 1/16W	R1370	1-216-837-11	METAL CHIP	22K 5% 1/16W
R1304	1-216-810-11	METAL CHIP	120 5% 1/16W	R1371	1-216-836-11	METAL CHIP	18K 5% 1/16W
R1305	1-216-810-11	METAL CHIP	120 5% 1/16W	R1372	1-216-837-11	METAL CHIP	22K 5% 1/16W
R1306	1-216-817-11	METAL CHIP	470 5% 1/16W	R1373	1-216-841-11	METAL CHIP	47K 5% 1/16W
R1307	1-216-817-11	METAL CHIP	470 5% 1/16W	R1375	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R1308	1-216-833-11	METAL CHIP	10K 5% 1/16W	R1376	1-216-841-11	METAL CHIP	47K 5% 1/16W
R1309	1-216-833-11	METAL CHIP	10K 5% 1/16W	R1381	1-216-864-11	METAL CHIP	0 5% 1/16W
R1312	1-216-831-11	METAL CHIP	6.8K 5% 1/16W				
R1316	1-216-839-11	METAL CHIP	33K 5% 1/16W				
R1317	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R1318	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R1321	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R1322	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R1323	1-216-823-11	METAL CHIP	1.5K 5% 1/16W				
R1324	1-216-841-11	METAL CHIP	47K 5% 1/16W				
R1325	1-216-841-11	METAL CHIP	47K 5% 1/16W				
R1330	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R1331	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R1334	1-216-839-11	METAL CHIP	33K 5% 1/16W				
R1335	1-216-839-11	METAL CHIP	33K 5% 1/16W				
R1336	1-216-841-11	METAL CHIP	47K 5% 1/16W				
R1337	1-216-839-11	METAL CHIP	33K 5% 1/16W				
R1338	1-216-863-11	METAL GLAZE	3.3M 5% 1/16W				
R1340	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R1341	1-216-863-11	METAL GLAZE	3.3M 5% 1/16W				
R1342	1-216-821-11	METAL CHIP	1K 5% 1/16W				
R1346	1-216-864-11	METAL CHIP	0 5% 1/16W				
R1347	1-216-864-11	METAL CHIP	0 5% 1/16W				
R1348	1-216-847-11	METAL CHIP	150K 5% 1/16W				
R1349	1-216-827-11	METAL CHIP	3.3K 5% 1/16W				
R1350	1-216-832-11	METAL CHIP	8.2K 5% 1/16W				
R1351	1-216-841-11	METAL CHIP	47K 5% 1/16W				
R1352	1-216-864-11	METAL CHIP	0 5% 1/16W				
R1353	1-216-817-11	METAL CHIP	470 5% 1/16W				
R1354	1-216-817-11	METAL CHIP	470 5% 1/16W				

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\* A-7063-952-A AU-169 BOARD, COMPLETE  
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 (TR42/TR70/TR82/TR550)  
 (Ref. No. 5,000 Series)

&lt; CAPACITOR &gt;

C402	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C403	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C404	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C405	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C407	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C408	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C409	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C411	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C412	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C413	1-126-209-11	ELECT	100uF	20%	4V
C414	1-128-006-11	ELECT CHIP	4.7uF	20%	25V
C415	1-128-004-11	ELECT CHIP	10uF	20%	16V
C416	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C418	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C419	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C421	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C422	1-164-674-11	CERAMIC CHIP	1800PF	5%	16V
C423	1-164-471-11	CERAMIC CHIP	680PF	5%	50V
C424	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C425	1-164-346-11	CERAMIC CHIP	1uF		16V



**AU-169****DD-60****DD-66**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C426	1-162-957-11	CERAMIC CHIP	220PF 5% 50V	R416	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
C428	1-128-006-11	ELECT CHIP	4.7uF 20% 25V	R417	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
C429	1-128-013-11	ELECT CHIP	1uF 20% 50V	R418	1-216-851-11	METAL CHIP	330K 5% 1/16W
C430	1-128-004-11	ELECT CHIP	10uF 20% 16V	R419	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
C431	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V	R420	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
C432	1-164-674-11	CERAMIC CHIP	1800PF 5% 16V	R421	1-216-864-11	METAL CHIP	0 5% 1/16W
C433	1-164-346-11	CERAMIC CHIP	1uF 16V	R423	1-216-839-11	METAL CHIP	33K 5% 1/16W
C434	1-128-003-11	ELECT CHIP	22uF 20% 4V	R424	1-216-833-11	METAL CHIP	10K 5% 1/16W
C435	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	R425	1-216-810-11	METAL CHIP	120 5% 1/16W
C436	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	R427	1-216-817-11	METAL CHIP	470 5% 1/16W
C437	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	R428	1-216-833-11	METAL CHIP	10K 5% 1/16W
C438	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	R429	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
C439	1-128-004-11	ELECT CHIP	10uF 20% 16V	R430	1-216-841-11	METAL CHIP	47K 5% 1/16W
C440	1-162-974-11	CERAMIC CHIP	0.01uF 50V	R431	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
C441	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	R432	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
C442	1-162-974-11	CERAMIC CHIP	0.01uF 50V	R433	1-216-817-11	METAL CHIP	470 5% 1/16W
< CONNECTOR >				R434	1-216-821-11	METAL CHIP	1K 5% 1/16W
CN401	1-691-516-11	CONNECTOR, BOARD TO BOARD 24P		R435	1-216-836-11	METAL CHIP	18K 5% 1/16W
CN402	1-691-487-21	CONNECTOR, FFC/FPC 8P		R436	1-216-837-11	METAL CHIP	22K 5% 1/16W
< DIODE >				*****			
D402	8-719-045-87	DIODE MA4Z082WA-TX		*	A-7063-960-A	DD-60 BOARD, COMPLETE	
< IC >						*****	
IC401	8-759-823-19	IC CXA1488RR				(TR72/TR400/TR430/TR750)	
< COIL >				*	A-7066-009-A	DD-60 BOARD, COMPLETE (TR80)	
L401	1-412-954-11	INDUCTOR 18uH				*****	
< TRANSISTOR >				*	A-7063-954-A	DD-66 BOARD, COMPLETE (TR42/TR82/TR550)	
Q402	8-729-230-63	TRANSISTOR 2SC4116				*****	
Q403	8-729-230-63	TRANSISTOR 2SC4116		*	A-7066-006-A	DD-66 BOARD, COMPLETE (TR70)	
Q404	8-729-402-81	TRANSISTOR XN4501				*****	
Q405	8-729-402-42	TRANSISTOR UN5213				(Ref. No. 9,000 Series)	
Q406	8-729-403-35	TRANSISTOR UN5113		< CAPACITOR >			
< RESISTOR >				C901	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V
R401	1-216-849-11	METAL CHIP	220K 5% 1/16W	C902	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
R402	1-216-864-11	METAL CHIP	0 5% 1/16W	C903	1-163-121-00	CERAMIC CHIP	150PF 5% 50V
R403	1-216-859-11	METAL GLAZE	1.5M 5% 1/16W	C904	1-163-121-00	CERAMIC CHIP	150PF 5% 50V
R404	1-216-851-11	METAL CHIP	330K 5% 1/16W	C906	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V
R407	1-216-837-11	METAL CHIP	22K 5% 1/16W	C907	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R409	1-216-833-11	METAL CHIP	10K 5% 1/16W	C908	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R410	1-216-840-11	METAL CHIP	39K 5% 1/16W	C909	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R411	1-216-833-11	METAL CHIP	10K 5% 1/16W	C910	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
R412	1-216-821-11	METAL CHIP	1K 5% 1/16W	C911	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R413	1-216-835-11	METAL CHIP	15K 5% 1/16W	C912	1-128-530-11	ELECT CHIP	33uF 20% 10V
R415	1-216-849-11	METAL CHIP	220K 5% 1/16W	C913	1-128-004-11	ELECT CHIP	10uF 20% 16V
				C914	1-128-004-11	ELECT CHIP	10uF 20% 16V
				C915	1-165-178-11	CERAMIC CHIP	6.8uF 16V
				C916	1-128-004-11	ELECT CHIP	10uF 20% 16V
				C917	1-165-178-11	CERAMIC CHIP	6.8uF 16V



Ref.No.	Part No.	Description		Remark	Ref.No.	Part No.	Description	Remark	
C918	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	J903	1-568-027-11	JACK, SMALL TYPE 1P (EARPHONE)		
C920	1-165-178-11	CERAMIC CHIP	6. 8uF	16V			(TR42/TR70/TR82/TR550)		
C921	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	J903	1-569-809-11	JACK (SMALL TYPE) (HEADPHONES)		
C923	1-165-178-11	CERAMIC CHIP	6. 8uF	16V			(TR72/TR80/TR400/TR430/TR750)		
C924	1-165-178-11	CERAMIC CHIP	6. 8uF	16V			< COIL >		
C925	1-164-337-11	CERAMIC CHIP	2. 2uF	16V	L901	1-424-653-11	COIL, CHOKE 10uH		
C926	1-164-337-11	CERAMIC CHIP	2. 2uF	16V	L902	1-424-653-11	COIL, CHOKE 10uH		
C927	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	L903	1-424-653-11	COIL, CHOKE 10uH		
C928	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	L904	1-409-556-11	COIL, CHOKE 47uH		
C929	1-135-216-11	TANTALUM CHIP	10uF	20%	10V	L905	1-424-674-11	COIL, CHOKE 22uH	
C930	1-107-418-11	ELECT CHIP	10uF	20%	35V	L906	1-409-556-11	COIL, CHOKE 47uH	
C931	1-128-004-11	ELECT CHIP	10uF	20%	16V	L907	1-424-674-11	COIL, CHOKE 22uH	
C932	1-128-004-11	ELECT CHIP	10uF	20%	16V	L908	1-424-674-11	COIL, CHOKE 22uH	
C934	1-128-004-11	ELECT CHIP	10uF	20%	16V	L909	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C935	1-128-004-11	ELECT CHIP	10uF	20%	16V	L910	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C936	1-128-004-11	ELECT CHIP	10uF	20%	16V	L911	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C937	1-128-004-11	ELECT CHIP	10uF	20%	16V	L912	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C938	1-128-004-11	ELECT CHIP	10uF	20%	16V	L913	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C939	1-163-023-00	CERAMIC CHIP	0. 015uF	5%	50V	L914	1-412-064-11	INDUCTOR CHIP 100uH	
C940	1-163-023-00	CERAMIC CHIP	0. 015uF	5%	50V	L915	1-412-064-11	INDUCTOR CHIP 100uH	
C941	1-163-019-00	CERAMIC CHIP	0. 0068uF	10%	50V	L916	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C942	1-163-009-11	CERAMIC CHIP	0. 001uF	10%	50V	L917	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C943	1-163-019-00	CERAMIC CHIP	0. 0068uF	10%	50V			< TRANSISTOR >	
C944	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V	Q900	8-729-421-90	TRANSISTOR XN4113 (TR70/TR80)	
C945	1-128-530-11	ELECT CHIP	33uF	20%	10V	Q901	8-729-420-12	TRANSISTOR XN4213	
C950	1-128-004-11	ELECT CHIP	10uF	20%	16V	Q902	8-729-804-41	TRANSISTOR 2SB1122	
		< CONNECTOR >			Q903	8-729-823-82	TRANSISTOR FP101		
CN901	1-695-324-11	CONNECTOR, BOARD TO BOARD 42P			Q904	8-729-823-84	TRANSISTOR FP102		
		< DIODE >			Q905	8-729-823-82	TRANSISTOR FP101		
D900	8-719-045-87	DIODE MA4Z082WA			Q906	8-729-823-82	TRANSISTOR FP101		
D901	8-719-027-77	DIODE MA796			Q907	8-729-823-82	TRANSISTOR FP101		
D902	8-719-045-87	DIODE MA4Z082WA			Q908	8-729-420-12	TRANSISTOR XN4213 (TR70/TR80)		
		(TR72/TR80/TR400/TR430/TR750)			Q909	8-729-805-25	TRANSISTOR 2SB1121		
D909	8-719-404-49	DIODE MA111			Q910	8-729-429-32	TRANSISTOR UN9210-QRS (TR70/TR80)		
D910	8-719-404-49	DIODE MA111			Q911	8-729-402-42	TRANSISTOR UN5213		
		< FUSE >			Q912	8-729-420-24	TRANSISTOR 2SB1218A		
△F450	1-576-213-11	FUSE, CHIP (1. 6A 125V)			Q914	8-729-402-42	TRANSISTOR UN5213		
△F451	1-576-213-11	FUSE, CHIP (1. 6A 125V)			Q915	8-729-402-42	TRANSISTOR UN5213		
△F452	1-576-213-11	FUSE, CHIP (1. 6A 125V)					< RESISTOR >		
		< IC >			R901	1-218-872-11	METAL CHIP 11K 0. 50% 1/16W		
IC901	8-759-249-14	IC MB3799-02PFV-GBND-ER			R902	1-216-833-11	METAL CHIP 10K 5% 1/16W		
		< JACK >			R903	1-216-827-11	METAL CHIP 3. 3K 5% 1/16W		
J901	1-537-281-41	TERMINAL BOARD (BATTERY)			R904	1-216-827-11	METAL CHIP 3. 3K 5% 1/16W		
J902	1-565-276-21	JACK, ULTRA SMALL 1P (REMOTE)			R905	1-216-836-11	METAL CHIP 18K 5% 1/16W		
					R906	1-216-827-11	METAL CHIP 3. 3K 5% 1/16W		
					R907	1-216-035-00	METAL CHIP 270 5% 1/10W		
					R908	1-216-834-11	METAL CHIP 12K 5% 1/16W		
					R909	1-216-031-00	METAL CHIP 180 5% 1/10W		

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.



**DD-60****DD-66****FP-49****FP-89 (CD)**

Ref. No.	Part No.	Description	Remark
R910	1-216-029-00	METAL CHIP 150 5% 1/10W	
R911	1-216-029-00	METAL CHIP 150 5% 1/10W	
R912	1-216-029-00	METAL CHIP 150 5% 1/10W	
R913	1-216-041-00	METAL CHIP 470 5% 1/10W	
R915	1-216-864-11	METAL CHIP 0 5% 1/16W	
R918	1-216-819-11	METAL CHIP 680 5% 1/16W	
R919	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R920	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R921	1-412-052-21	INDUCTOR CHIP 1uH	
R922	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R923	1-412-052-21	INDUCTOR CHIP 1uH	
R924	1-412-979-21	INDUCTOR 1uH	
R925	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R926	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R931	1-216-864-11	METAL CHIP 0 5% 1/16W	
R932	1-412-979-21	INDUCTOR 1uH	
R933	1-412-979-21	INDUCTOR 1uH (TR72/TR80/TR400/TR430/TR750)	
R934	1-216-864-11	METAL CHIP 0 5% 1/16W	
R936	1-412-979-21	INDUCTOR 1uH	
R937	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R938	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R939	1-216-864-11	METAL CHIP 0 5% 1/16W (TR70/TR80)	
R940	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R941	1-218-849-11	METAL CHIP 1.2K 0.50% 1/16W	
R942	1-216-864-11	METAL CHIP 0 5% 1/16W	
R943	1-216-864-11	METAL CHIP 0 5% 1/16W (TR70/TR80)	
R944	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R945	1-218-847-11	METAL CHIP 1K 0.50% 1/16W	
R946	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR70/TR80)	
R947	1-216-828-11	METAL CHIP 3.9K 5% 1/16W (TR70/TR80)	
R948	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR70/TR80)	
R949	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR70/TR80)	
< TRANSFORMER >			
T901	1-426-730-11	TRANSFORMER, CONVERTER	

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Ref. No.	Part No.	Description	Remark
*	1-651-890-11	FP-49 FLEXIBLE BOARD ***** (TR82/TR400/TR550/TR750) (Ref. No. 3,000 Series)	
< SENSOR >			
SE691	1-810-024-31	SENSOR, ANGULAR VELOCITY	
SE692	1-810-024-41	SENSOR, ANGULAR VELOCITY	
*****			
*	A-7072-004-A	FP-89 (CD) BOARD, COMPLETE ***** (TR82/TR400/TR550/TR750)	
*	A-7072-005-A	FP-89 (CD) BOARD, COMPLETE ***** (TR42/TR70/TR72/TR80/TR430) (Ref. No. 3,000 Series)	
< CAPACITOR >			
C691	1-135-214-21	TANTAL. CHIP 4.7uF 20% 20V	
C692	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C694	1-164-346-11	CERAMIC CHIP 1uF 16V	
C695	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C696	1-104-908-11	TANTAL. CHIP 47uF 20% 4V	
< IC >			
IC691	A-7030-368-A	CCD BLOCK ASSY (AUTO) (054 SERVICE) (CCD IMAGER) (TR42/TR70/TR72/TR80/TR430)	
IC691	A-7030-373-A	CCD BLOCK ASSY (AUTO) (059V SERVICE) (CCD IMAGER) (TR82/TR400/TR550/TR750)	
< COIL >			
L691	1-412-963-11	INDUCTOR 100uH	
< TRANSISTOR >			
Q691	8-729-232-86	TRANSISTOR 2SK1875-BL/V	
Q692	8-729-117-73	TRANSISTOR 2SC4178-F14	
< RESISTOR >			
R691	1-216-295-00	METAL CHIP 0 5% 1/10W	
R692	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R693	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	
R693	1-216-840-11	METAL CHIP 39K 5% 1/16W (TR82/TR400/TR550/TR750)	
R694	1-216-819-11	METAL CHIP 680 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	
R694	1-216-820-11	METAL CHIP 820 5% 1/16W (TR82/TR400/TR550/TR750)	
R695	1-216-845-11	METAL CHIP 100K 5% 1/16W (TR82/TR400/TR550/TR750)	

Be sure to read "Note on the CCD Imager replacement" on page 4-6 when changing the CCD imager.

Ref. No.	Part No.	Description	Rev.	Ref. No.	Part No.	Description	Rev.
880	1-03-05-00	WALL, CIST	00 00 1/00	8	1-03-05-11	SP-IN FLANGE WASH	
881	1-03-05-00	WALL, CIST	00 00 1/00			*****	
882	1-03-05-00	WALL, CIST	00 00 1/00			(PUMP/TRANS/TRANS/TRANS)	
883	1-03-05-00	WALL, CIST	00 00 1/00			(Ref. No. 4, 000 Series)	
884	1-03-05-00	WALL, CIST	00 00 1/00				
885	1-03-05-00	WALL, CIST	00 00 1/00				
886	1-03-05-00	WALL, CIST	00 00 1/00				
887	1-03-05-00	WALL, CIST	00 00 1/00				
888	1-03-05-00	WALL, CIST	00 00 1/00				
889	1-03-05-00	WALL, CIST	00 00 1/00				
890	1-03-05-00	WALL, CIST	00 00 1/00				
891	1-03-05-00	WALL, CIST	00 00 1/00				
892	1-03-05-00	WALL, CIST	00 00 1/00				
893	1-03-05-00	WALL, CIST	00 00 1/00				
894	1-03-05-00	WALL, CIST	00 00 1/00				
895	1-03-05-00	WALL, CIST	00 00 1/00				
896	1-03-05-00	WALL, CIST	00 00 1/00				
897	1-03-05-00	WALL, CIST	00 00 1/00				
898	1-03-05-00	WALL, CIST	00 00 1/00				
899	1-03-05-00	WALL, CIST	00 00 1/00				
900	1-03-05-00	WALL, CIST	00 00 1/00				
901	1-03-05-00	WALL, CIST	00 00 1/00				
902	1-03-05-00	WALL, CIST	00 00 1/00				
903	1-03-05-00	WALL, CIST	00 00 1/00				
904	1-03-05-00	WALL, CIST	00 00 1/00				
905	1-03-05-00	WALL, CIST	00 00 1/00				
906	1-03-05-00	WALL, CIST	00 00 1/00				
907	1-03-05-00	WALL, CIST	00 00 1/00				
908	1-03-05-00	WALL, CIST	00 00 1/00				
909	1-03-05-00	WALL, CIST	00 00 1/00				
910	1-03-05-00	WALL, CIST	00 00 1/00				
911	1-03-05-00	WALL, CIST	00 00 1/00				
912	1-03-05-00	WALL, CIST	00 00 1/00				
913	1-03-05-00	WALL, CIST	00 00 1/00				
914	1-03-05-00	WALL, CIST	00 00 1/00				
915	1-03-05-00	WALL, CIST	00 00 1/00				
916	1-03-05-00	WALL, CIST	00 00 1/00				
917	1-03-05-00	WALL, CIST	00 00 1/00				
918	1-03-05-00	WALL, CIST	00 00 1/00				
919	1-03-05-00	WALL, CIST	00 00 1/00				
920	1-03-05-00	WALL, CIST	00 00 1/00				
921	1-03-05-00	WALL, CIST	00 00 1/00				
922	1-03-05-00	WALL, CIST	00 00 1/00				
923	1-03-05-00	WALL, CIST	00 00 1/00				
924	1-03-05-00	WALL, CIST	00 00 1/00				
925	1-03-05-00	WALL, CIST	00 00 1/00				
926	1-03-05-00	WALL, CIST	00 00 1/00				
927	1-03-05-00	WALL, CIST	00 00 1/00				
928	1-03-05-00	WALL, CIST	00 00 1/00				
929	1-03-05-00	WALL, CIST	00 00 1/00				
930	1-03-05-00	WALL, CIST	00 00 1/00				
931	1-03-05-00	WALL, CIST	00 00 1/00				
932	1-03-05-00	WALL, CIST	00 00 1/00				
933	1-03-05-00	WALL, CIST	00 00 1/00				
934	1-03-05-00	WALL, CIST	00 00 1/00				
935	1-03-05-00	WALL, CIST	00 00 1/00				
936	1-03-05-00	WALL, CIST	00 00 1/00				
937	1-03-05-00	WALL, CIST	00 00 1/00				
938	1-03-05-00	WALL, CIST	00 00 1/00				
939	1-03-05-00	WALL, CIST	00 00 1/00				
940	1-03-05-00	WALL, CIST	00 00 1/00				
941	1-03-05-00	WALL, CIST	00 00 1/00				
942	1-03-05-00	WALL, CIST	00 00 1/00				
943	1-03-05-00	WALL, CIST	00 00 1/00				
944	1-03-05-00	WALL, CIST	00 00 1/00				
945	1-03-05-00	WALL, CIST	00 00 1/00				
946	1-03-05-00	WALL, CIST	00 00 1/00				
947	1-03-05-00	WALL, CIST	00 00 1/00				
948	1-03-05-00	WALL, CIST	00 00 1/00				
949	1-03-05-00	WALL, CIST	00 00 1/00				
950	1-03-05-00	WALL, CIST	00 00 1/00				
951	1-03-05-00	WALL, CIST	00 00 1/00				
952	1-03-05-00	WALL, CIST	00 00 1/00				
953	1-03-05-00	WALL, CIST	00 00 1/00				
954	1-03-05-00	WALL, CIST	00 00 1/00				
955	1-03-05-00	WALL, CIST	00 00 1/00				
956	1-03-05-00	WALL, CIST	00 00 1/00				
957	1-03-05-00	WALL, CIST	00 00 1/00				
958	1-03-05-00	WALL, CIST	00 00 1/00				
959	1-03-05-00	WALL, CIST	00 00 1/00				
960	1-03-05-00	WALL, CIST	00 00 1/00				
961	1-03-05-00	WALL, CIST	00 00 1/00				
962	1-03-05-00	WALL, CIST	00 00 1/00				
963	1-03-05-00	WALL, CIST	00 00 1/00				
964	1-03-05-00	WALL, CIST	00 00 1/00				
965	1-03-05-00	WALL, CIST	00 00 1/00				
966	1-03-05-00	WALL, CIST	00 00 1/00				
967	1-03-05-00	WALL, CIST	00 00 1/00				
968	1-03-05-00	WALL, CIST	00 00 1/00				
969	1-03-05-00	WALL, CIST	00 00 1/00				
970	1-03-05-00	WALL, CIST	00 00 1/00				

Do not re-plant "buds" on the (000) larger replacement" on page 4-1 (buds) changing the (000) input.



Ref.No.	Part No.	Description	Remark		
R695	1-216-849-11	METAL CHIP	220K 5%	1/16W	
			(TR42/TR70/TR72/TR80/TR430)		
R696	1-216-809-11	METAL CHIP	100 5%	1/16W	
R697	1-216-833-11	METAL CHIP	10K 5%	1/16W	
*****					
*	A-7066-078-A	HE-14 BOARD, COMPLETE	(TR400/TR750)		
		*****			
			(Ref. No. 20,000 Series)		
< CAPACITOR >					
C1101	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1102	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C1103	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1104	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C1106	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1107	1-162-975-11	CERAMIC CHIP	24PF	5%	50V
C1108	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C1109	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C1110	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C1111	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1112	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1113	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1115	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1116	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1117	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1118	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1119	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1122	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1123	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1124	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1125	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1126	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1127	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C1128	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1129	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C1130	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1131	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1132	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1133	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1134	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1135	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1136	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1137	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1138	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1140	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1141	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1142	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C1143	1-162-912-11	CERAMIC CHIP	7PF	0.5PF	50V

Ref.No.	Part No.	Description	Remark		
C1144	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C1146	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1150	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C1151	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C1152	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1155	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1156	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1157	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1158	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C1160	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1161	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1162	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C1163	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C1164	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1165	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C1166	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1167	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1168	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C1169	1-164-155-11	CERAMIC CHIP	75PF	5%	50V
C1171	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C1173	1-162-952-11	CERAMIC CHIP	82PF	5%	50V
C1175	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C1176	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C1178	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1179	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C1181	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
C1182	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C1183	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1184	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1185	1-164-149-11	CERAMIC CHIP	36PF	5%	50V
C1188	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1189	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1192	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C1193	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V
< CONNECTOR >					
* CN1101	1-573-341-11	CONNECTOR, BOARD TO BOARD	26P		
< DIODE >					
D1101	8-719-404-49	DIODE	MA111		
D1102	8-719-027-48	DIODE	MA142WA		
D1103	8-719-027-48	DIODE	MA142WA		
D1105	8-719-404-49	DIODE	MA111		
< FILTER >					
FL1101	1-236-775-11	FILTER, LOW PASS (DEM)			
FL1102	1-239-112-21	FILTER, LOW PASS (Y)			
< IC >					
IC1101	8-752-058-02	IC	CXA1509AR		



# HE-14

Ref. No.	Part No.	Description
IC1102	8-759-070-51	IC SN74HCU04ADB
< COIL >		
L1101	1-412-956-21	INDUCTOR 27uH
L1102	1-412-954-11	INDUCTOR 18uH
L1103	1-412-947-11	INDUCTOR 4.7uH
L1104	1-412-959-11	INDUCTOR 47uH
L1105	1-412-954-11	INDUCTOR 18uH
L1106	1-412-945-11	INDUCTOR 3.3uH
L1108	1-412-954-11	INDUCTOR 18uH
L1109	1-412-948-11	INDUCTOR 5.6uH
L1110	1-412-956-21	INDUCTOR 27uH
L1111	1-410-655-31	INDUCTOR CHIP 120uH
L1112	1-412-058-11	INDUCTOR CHIP 10uH
L1113	1-412-058-11	INDUCTOR CHIP 10uH
L1114	1-412-957-11	INDUCTOR 33uH
L1115	1-412-952-11	INDUCTOR 12uH
L1116	1-412-948-11	INDUCTOR 5.6uH
L1118	1-412-953-11	INDUCTOR 15uH
L1119	1-412-949-21	INDUCTOR 6.8uH
L1121	1-412-947-11	INDUCTOR 4.7uH
L1122	1-412-954-11	INDUCTOR 18uH
L1123	1-412-949-21	INDUCTOR 6.8uH
L1124	1-412-960-21	INDUCTOR 56uH
< TRANSISTOR >		
Q1102	8-729-402-42	TRANSISTOR UN5213
Q1103	8-729-012-50	TRANSISTOR 2SC4400
Q1107	8-729-402-42	TRANSISTOR UN5213
Q1110	8-729-120-28	TRANSISTOR 2SC1623
Q1111	8-729-420-24	TRANSISTOR 2SB1218A
Q1113	8-729-012-50	TRANSISTOR 2SC4400
Q1114	8-729-402-81	TRANSISTOR XN4501
Q1115	8-729-012-50	TRANSISTOR 2SC4400
Q1117	8-729-230-63	TRANSISTOR 2SC4116
Q1118	8-729-230-63	TRANSISTOR 2SC4116
Q1119	8-729-402-42	TRANSISTOR UN5213
Q1120	8-729-403-35	TRANSISTOR UN5113
Q1121	8-729-420-24	TRANSISTOR 2SB1218A
Q1123	8-729-012-50	TRANSISTOR 2SC4400
Q1125	8-729-420-24	TRANSISTOR 2SB1218A
Q1126	8-729-012-50	TRANSISTOR 2SC4400
Q1127	8-729-403-35	TRANSISTOR UN5113
Q1128	8-729-230-63	TRANSISTOR 2SC4116
Q1129	8-729-012-50	TRANSISTOR 2SC4400
Q1131	8-729-824-02	TRANSISTOR 2SA1838
Q1132	8-729-012-50	TRANSISTOR 2SC4400
Q1133	8-729-012-50	TRANSISTOR 2SC4400
Q1134	8-729-402-42	TRANSISTOR UN5213
Q1137	8-729-230-63	TRANSISTOR 2SC4116

Ref. No.	Part No.	Description	Remark
Q1138	8-729-420-24	TRANSISTOR 2SB1218A	
< RESISTOR >			
R1101	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1102	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1103	1-216-820-11	METAL CHIP 820 5%	1/16W
R1104	1-216-819-11	METAL CHIP 680 5%	1/16W
R1105	1-216-817-11	METAL CHIP 470 5%	1/16W
R1106	1-216-809-11	METAL CHIP 100 5%	1/16W
R1107	1-216-815-11	METAL CHIP 330 5%	1/16W
R1108	1-216-813-11	METAL CHIP 220 5%	1/16W
R1109	1-216-813-11	METAL CHIP 220 5%	1/16W
R1111	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1112	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1113	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1114	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1115	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1116	1-216-833-11	METAL CHIP 10K 5%	1/16W
R1118	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1119	1-216-816-11	METAL CHIP 390 5%	1/16W
R1120	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
R1123	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
R1124	1-216-826-11	METAL CHIP 2.7K 5%	1/16W
R1125	1-216-840-11	METAL CHIP 39K 5%	1/16W
R1127	1-216-841-11	METAL CHIP 47K 5%	1/16W
R1128	1-216-833-11	METAL CHIP 10K 5%	1/16W
R1130	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1131	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1132	1-216-820-11	METAL CHIP 820 5%	1/16W
R1134	1-216-820-11	METAL CHIP 820 5%	1/16W
R1135	1-216-814-11	METAL CHIP 270 5%	1/16W
R1136	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1138	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1139	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1148	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1149	1-216-838-11	METAL CHIP 27K 5%	1/16W
R1151	1-216-826-11	METAL CHIP 2.7K 5%	1/16W
R1152	1-216-833-11	METAL CHIP 10K 5%	1/16W
R1153	1-216-818-11	METAL CHIP 560 5%	1/16W
R1154	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1155	1-216-817-11	METAL CHIP 470 5%	1/16W
R1156	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1157	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1158	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1159	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1160	1-216-820-11	METAL CHIP 820 5%	1/16W
R1161	1-216-819-11	METAL CHIP 680 5%	1/16W
R1162	1-216-845-11	METAL CHIP 100K 5%	1/16W
R1163	1-216-817-11	METAL CHIP 470 5%	1/16W
R1164	1-216-829-11	METAL CHIP 4.7K 5%	1/16W



**HE-14****LB-35****LS-33****MA-179**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R1165	1-216-814-11	METAL CHIP	270 5% 1/16W	*	A-7056-012-A	LB-35 BOARD, COMPLETE (TR70/80)	
R1166	1-216-815-11	METAL CHIP	330 5% 1/16W			*****	
R1167	1-216-864-11	METAL CHIP	0 5% 1/16W			(Ref. No. 4,000 Series)	
R1168	1-216-826-11	METAL CHIP	2.7K 5% 1/16W			< CONNECTOR >	
R1169	1-216-836-11	METAL CHIP	18K 5% 1/16W				
R1170	1-216-839-11	METAL CHIP	33K 5% 1/16W	CN801	1-573-812-11	CONNECTOR, BOARD TO BOARD 12P	
R1171	1-216-842-11	METAL CHIP	56K 5% 1/16W			< DIODE >	
R1172	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R1173	1-216-837-11	METAL CHIP	22K 5% 1/16W	D801	8-719-037-83	DIODE LN1371G-(TR)	
R1174	1-216-813-11	METAL CHIP	220 5% 1/16W			*****	
R1175	1-216-813-11	METAL CHIP	220 5% 1/16W			LS-33 BOARD	
R1176	1-216-821-11	METAL CHIP	1K 5% 1/16W			*****	
R1177	1-216-814-11	METAL CHIP	270 5% 1/16W			< DIODE >	
R1178	1-216-828-11	METAL CHIP	3.9K 5% 1/16W				
R1179	1-216-833-11	METAL CHIP	10K 5% 1/16W	D001	8-719-989-52	DIODE GL4600S	
R1180	1-216-864-11	METAL CHIP	0 5% 1/16W			< HALL >	
R1182	1-216-825-11	METAL CHIP	2.2K 5% 1/16W				
R1183	1-216-811-11	METAL CHIP	150 5% 1/16W	H001	8-719-987-62	DIODE LT140SAZ	
R1184	1-216-819-11	METAL CHIP	680 5% 1/16W	H002	8-719-987-62	DIODE LT140SAZ	
R1186	1-216-817-11	METAL CHIP	470 5% 1/16W			< TRANSISTOR >	
R1187	1-216-815-11	METAL CHIP	330 5% 1/16W	Q001	8-729-012-46	TRANSISTOR PT4600FS	
R1188	1-216-820-11	METAL CHIP	820 5% 1/16W	Q002	8-729-012-46	TRANSISTOR PT4600FS	
R1189	1-216-864-11	METAL CHIP	0 5% 1/16W			< RESISTOR >	
R1190	1-216-816-11	METAL CHIP	390 5% 1/16W				
R1191	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R003	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1194	1-216-819-11	METAL CHIP	680 5% 1/16W	R004	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1196	1-216-833-11	METAL CHIP	10K 5% 1/16W	R010	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1197	1-216-833-11	METAL CHIP	10K 5% 1/16W	R011	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1198	1-216-819-11	METAL CHIP	680 5% 1/16W			< SWITCH >	
R1199	1-216-819-11	METAL CHIP	680 5% 1/16W	S002	1-572-987-11	SWITCH, PUSH (3 KEY)	
R1202	1-216-811-11	METAL CHIP	150 5% 1/16W			*****	
R1203	1-216-833-11	METAL CHIP	10K 5% 1/16W	*	A-7063-962-A	MA-179 BOARD, COMPLETE	
R1204	1-216-815-11	METAL CHIP	330 5% 1/16W			*****	
R1205	1-216-817-11	METAL CHIP	470 5% 1/16W			(TR72/TR80/TR400/TR430/TR750)	
R1206	1-216-817-11	METAL CHIP	470 5% 1/16W			(Ref. No. 7,000 Series)	
R1207	1-216-815-11	METAL CHIP	330 5% 1/16W			< CAPACITOR >	
R1209	1-216-864-11	METAL CHIP	0 5% 1/16W				
R1210	1-216-831-11	METAL CHIP	6.8K 5% 1/16W	C001	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	
R1214	1-216-820-11	METAL CHIP	820 5% 1/16W	C003	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
R1215	1-216-819-11	METAL CHIP	680 5% 1/16W	C005	1-163-023-00	CERAMIC CHIP 0.015uF 5% 50V	
R1216	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	C006	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
R1217	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	C007	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
R1218	1-216-817-11	METAL CHIP	470 5% 1/16W				
R1219	1-216-817-11	METAL CHIP	470 5% 1/16W	C008	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
R1220	1-216-864-11	METAL CHIP	0 5% 1/16W	C009	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
R1221	1-216-864-11	METAL CHIP	0 5% 1/16W	C010	1-135-091-21	TANTAL. CHIP 1uF 20% 16V	
R1223	1-216-864-11	METAL CHIP	0 5% 1/16W				
R1226	1-216-864-11	METAL CHIP	0 5% 1/16W				
*****							



Ref. No.	Part No.	Description	Remark
C011	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C012	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C013	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C014	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C015	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C019	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C020	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C021	1-126-205-11	ELECT CHIP 47uF 20%	6.3V
C022	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C023	1-135-091-21	TANTAL. CHIP 1uF 20%	16V
C024	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C025	1-163-023-00	CERAMIC CHIP 0.015uF 5%	50V
C026	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C027	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C030	1-164-343-11	CERAMIC CHIP 0.056uF 10%	25V
C043	1-128-004-11	ELECT CHIP 10uF 20%	16V
< CONNECTOR >			
CN001	1-691-490-21	CONNECTOR, FFC/FPC 11P	
CN002	1-580-057-11	PIN, CONNECTOR 4P	
CN003	1-580-057-11	PIN, CONNECTOR 4P	
< DIODE >			
D001	8-719-404-46	DIODE MA110	
D002	8-719-404-46	DIODE MA110	
D004	8-719-404-19	DIODE LN1251C (TALLY)	
< IC >			
IC001	8-759-084-53	IC CXA1618AN-E2	
IC002	8-749-923-29	IC RS-20E-T	
< JACK >			
J001	1-691-737-11	JACK (SMALL TYPE)(EXT MIC)	
< COIL >			
L001	1-412-939-11	INDUCTOR 1uH	
L002	1-412-939-11	INDUCTOR 1uH	
L003	1-412-939-11	INDUCTOR 1uH	
< TRANSISTOR >			
Q001	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q003	8-729-402-42	TRANSISTOR UN5213	
< RESISTOR >			
R003	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R004	1-216-833-11	METAL CHIP 10K 5%	1/16W
R005	1-216-821-11	METAL CHIP 1K 5%	1/16W
R006	1-216-813-11	METAL CHIP 220 5%	1/16W
R007	1-216-834-11	METAL CHIP 12K 5%	1/16W

Ref. No.	Part No.	Description	Remark
R008	1-216-834-11	METAL CHIP 12K 5%	1/16W
R009	1-216-835-11	METAL CHIP 15K 5%	1/16W
R010	1-216-833-11	METAL CHIP 10K 5%	1/16W
R011	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R012	1-216-839-11	METAL CHIP 33K 5%	1/16W
R013	1-216-831-11	METAL CHIP 6.8K 5%	1/16W
R014	1-216-831-11	METAL CHIP 6.8K 5%	1/16W
R015	1-216-839-11	METAL CHIP 33K 5%	1/16W
R016	1-216-833-11	METAL CHIP 10K 5%	1/16W
R017	1-216-835-11	METAL CHIP 15K 5%	1/16W
R018	1-216-834-11	METAL CHIP 12K 5%	1/16W
R019	1-216-834-11	METAL CHIP 12K 5%	1/16W
R020	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R022	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R023	1-216-833-11	METAL CHIP 10K 5%	1/16W
R024	1-216-821-11	METAL CHIP 1K 5%	1/16W
R025	1-216-864-11	METAL CHIP 0 5%	1/16W
R027	1-216-864-11	METAL CHIP 0 5%	1/16W
R036	1-216-864-11	METAL CHIP 0 5%	1/16W
R037	1-216-839-11	METAL CHIP 33K 5%	1/16W
R039	1-216-824-11	METAL CHIP 1.8K 5%	1/16W
R043	1-216-815-11	METAL CHIP 330 5%	1/16W
*****			
* A-7063-956-A MA-199 BOARD, COMPLETE			
*****			
(TR42/TR70/TR82/TR550)			
(Ref. No. 5,000 Series)			
< CAPACITOR >			
C014	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C015	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V
C032	1-164-346-11	CERAMIC CHIP 1uF	16V
C033	1-162-953-11	CERAMIC CHIP 100PF 5%	50V
C034	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C035	1-162-587-11	CERAMIC CHIP 0.039uF 10%	25V
C036	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C037	1-164-346-11	CERAMIC CHIP 1uF	16V
C040	1-126-205-11	ELECT CHIP 47uF 20%	6.3V
C041	1-164-345-11	CERAMIC CHIP 0.082uF 10%	25V
C043	1-128-004-11	ELECT CHIP 10uF 20%	16V
< CONNECTOR >			
CN001	1-691-487-21	CONNECTOR, FFC/FPC 8P	
CN003	1-580-057-11	PIN, CONNECTOR 4P	
< DIODE >			
D001	8-719-404-49	DIODE MA111	
D002	8-719-404-49	DIODE MA111	
D004	8-719-404-19	DIODE LN1251C (TALLY)	

Set No.	Part No.	Short Section	Unit	Weight	Price
CH1	1-10-100-11	CHAMIC CHP	4.100"	100	100
CH2	1-10-100-11	CHAMIC CHP	4.100"	100	100
CH3	1-10-100-11	CHAMIC CHP	1.000"	50	100
CH4	1-10-100-11	CHAMIC CHP	1.000"	100	100
CH5	1-10-100-11	CHAMIC CHP	2.000"	100	100
CH6	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH7	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH8	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH9	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH10	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH11	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH12	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH13	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH14	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH15	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH16	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH17	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH18	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH19	1-10-100-11	CHAMIC CHP	2.100"	100	100
CH20	1-10-100-11	CHAMIC CHP	2.100"	100	100

[illegible]

0000	1-800-800-00	COMMERCIAL TRAVEL
0000	1-800-800-00	REL. COMMERCIAL
0000	1-800-800-00	REL. COMMERCIAL

100

DATE	0-7-2000-00	NUMBER	001
DATE	0-7-2000-00	NUMBER	002
DATE	0-7-2000-00	NUMBER	003

100

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000
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**Abstract**



1.00	0.00	0.00	0.00
0.00	1.00	0.00	0.00
0.00	0.00	1.00	0.00
0.00	0.00	0.00	1.00

100

2011	1-1-12-1	2011-12-1	2011-12-1
2011	1-1-12-1	2011-12-1	2011-12-1

100

[illegible]

Seq. No.	Partic. No.	Device Part No.			Amount
00001	1-000-000-01	00001, 0000	100	100	1.0000
00002	1-000-000-01	00001, 0000	100	100	1.0000
00003	1-000-000-01	00001, 0000	100	100	1.0000
00004	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00005	1-000-000-01	00001, 0000	100	100	1.0000
00006	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00007	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00008	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00009	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00010	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00011	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00012	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00013	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00014	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00015	1-000-000-01	00001, 0000	1.00	1.00	1.0000
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00017	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00018	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00019	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00020	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00021	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00022	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00023	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00024	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00025	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00026	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00027	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00028	1-000-000-01	00001, 0000	1.00	1.00	1.0000
00029	1-000-000-01	00001, 0000	1.00	1.00	1.0000

100

[illegible][illegible]

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2116	1-1-2116-1-1	2116-1-1	2116-1-1	2116-1-1	2116-1-1	2116-1-1
2117	1-1-2117-1-1	2117-1-1	2117-1-1	2117-1-1	2117-1-1	2117-1-1
2118	1-1-2118-1-1	2118-1-1	2118-1-1	2118-1-1	2118-1-1	2118-1-1
2119	1-1-2119-1-1	2119-1-1	2119-1-1	2119-1-1	2119-1-1	2119-1-1
2120	1-1-2120-1-1	21				

0000	1-100-00-01	CHARGIC	EXP	1.00000	100	000
0000	1-100-00-02	CHARGIC	EXP	1.000	100	000
0000	1-100-00-03	CHARGIC	EXP	1.00	100	000
0000	1-100-00-04	CHARGIC	EXP	1.0000	100	000
0000	1-100-00-05	CHARGIC	EXP	1.00000	100	000
0000	1-100-00-06	CHARGIC	EXP	1.000000	100	000
0000	1-100-00-07	CHARGIC	EXP	1.0000000	100	000
0000	1-100-00-08	CHARGIC	EXP	1.00000000	100	000
0000	1-100-00-09	CHARGIC	EXP	1.000000000	100	000
0000	1-100-00-10	CHARGIC	EXP	1.0000000000	100	000

**Abstract**

2000 2001-2002 2003-2004 2005-2006 2007-2008 2009-2010 2011-2012 2013-2014 2015-2016 2017-2018 2019-2020 2021-2022 2023-2024 2025-2026 2027-2028 2029-2030 2031-2032 2033-2034 2035-2036 2037-2038 2039-2040 2041-2042 2043-2044 2045-2046 2047-2048 2049-2050 2051-2052 2053-2054 2055-2056 2057-2058 2059-2060 2061-2062 2063-2064 2065-2066 2067-2068 2069-2070 2071-2072 2073-2074 2075-2076 2077-2078 2079-2080 2081-2082 2083-2084 2085-2086 2087-2088 2089-2090 2091-2092 2093-2094 2095-2096 2097-2098 2099-2100 2101-2102 2103-2104 2105-2106 2107-2108 2109-2110 2111-2112 2113-2114 2115-2116 2117-2118 2119-2120 2121-2122 2123-2124 2125-2126 2127-2128 2129-2130 2131-2132 2133-2134 2135-2136 2137-2138 2139-2140 2141-2142 2143-2144 2145-2146 2147-2148 2149-2150 2151-2152 2153-2154 2155-2156 2157-2158 2159-2160 2161-2162 2163-2164 2165-2166 2167-2168 2169-2170 2171-2172 2173-2174 2175-2176 2177-2178 2179-2180 2181-2182 2183-2184 2185-2186 2187-2188 2189-2190 2191-2192 2193-2194 2195-2196 2197-2198 2199-2200 2201-2202 2203-2204 2205-2206 2207-2208 2209-2210 2211-2212 2213-2214 2215-2216 2217-2218 2219-2220 2221-2222 2223-2224 2225-2226 2227-2228 2229-2230 2231-2232 2233-2234 2235-2236 2237-2238 2239-2240 2241-2242 2243-2244 2245-2246 2247-2248 2249-2250 2251-2252 2253-2254 2255-2256 2257-2258 2259-2260 2261-2262 2263-2264 2265-2266 2267-2268 2269-2270 2271-2272 2273-2274 2275-2276 2277-2278 2279-2280 2281-2282 2283-2284 2285-2286 2287-2288 2289-2290 2291-2292 2293-2294 2295-2296 2297-2298 2299-2300 2301-2302 2303-2304 2305-2306 2307-2308 2309-2310 2311-2312 2313-2314 2315-2316 2317-2318 2319-2320 2321-2322 2323-2324 2325-2326 2327-2328 2329-2330 2331-2332 2333-2334 2335-2336 2337-2338 2339-2340 2341-2342 2343-2344 2345-2346 2347-2348 2349-2350 2351-2352 2353-2354 2355-2356 2357-2358 2359-2360 2361-2362 2363-2364 2365-2366 2367-2368 2369-2370 2371-2372 2373-2374 2375-2376 2377-2378 2379-2380 2381-2382 2383-2384 2385-2386 2387-2388 2389-2390 2391-2392 2393-2394 2395-2396 2397-2398 2399-2400 2401-2402 2403-2404 2405-2406 2407-2408 2409-2410 2411-2412 2413-2414 2415-2416 2417-2418 2419-2420 2421-2422 2423-2424 2425-2426 2427-2428 2429-2430 2431-2432 2433-2434 2435-2436 2437-2438 2439-2440 2441-2442 2443-2444 2445-2446 2447-2448 2449-2450 2451-2452 2453-2454 2455-2456 2457-2458 2459-2460 2461-2462 2463-2464 2465-2466 2467-2468 2469-2470 2471-2472 2473-2474 2475-2476 2477-2478 2479-2480 2481-2482 2483-2484 2485-2486 2487-2488 2489-2490 2491-2492 2493-2494 2495-2496 2497-2498 2499-2500 2501-2502 2503-2504 2505-2506 2507-2508 2509-2510 2511-2512 2513-2514 2515-2516 2517-2518 2519-2520 2521-2522 2523-2524 2525-2526 2527-2528 2529-2530 2531-2532 2533-2534 2535-2536 2537-2538 2539-2540 2541-2542 2543-2544 2545-2546 2547-2548 2549-2550 2551-2552 2553-2554 2555-2556 2557-2558 2559-2560 2561-2562 2563-2564 2565-2566 2567-2568 2569-2570 2571-2572 2573-2574 2575-2576 2577-2578 2579-2580 2581-2582 2583-2584 2585-2586 2587-2588 2589-2590 2591-2592 2593-2594 2595-2596 2597-2598 2599-2600 2601-2602 2603-2604 2605-2606 2607-2608 2609-2610 2611-2612 2613-2614 2615-2616 2617-2618 2619-2620 2621-2622 2623-2624 2625-2626 2627-2628 2629-2630 2631-2632 2633-2634 2635-2636 2637-2638 2639-2640 2641-2642 2643-2644 2645-2646 2647-2648 2649-2650 2651-2652 2653-2654 2655-2656 2657-2658 2659-2660 2661-2662 2663-2664 2665-2666 2667-2668 2669-2670 2671-2672 2673-2674 2675-2676 2677-2678 2679-2680 2681-2682 2683-2684 2685-2686 2687-2688 2689-2690 2691-2692 2693-2694 2695-2696 2697-2698 2699-2700 2701-2702 2703-2704 2705-2706 2707-2708 2709-2710 2711-2712 2713-2714 2715-2716 2717-2718 2719-2720 2721-2722 2723-2724 2725-2726 2727-2728 2729-2730 2731-2732 2733-2734 2735-2736 2737-2738 2739-2740 2741-2742 2743-2744 2745-2746 2747-2748 2749-2750 2751-2752 2753-2754 2755-2756 2757-2758 2759-2760 2761-2762 2763-2764 2765-2766 2767-2768 2769-2770 2771-2772 2773-2774 2775-2776 2777-2778 2779-2780 2781-2782 2783-2784 2785-2786 2787-2788 2789-2790 2791-2792 2793-2794 2795-2796 2797-2798 2799-2800 2801-2802 2803-2804 2805-2806 2807-2808 2809-2810 2811-2812 2813-2814 2815-2816 2817-2818

100

2001	1-11-11-11	11111	11111
2002	1-11-11-11	11111	11111
2003	1-11-11-11	11111	11111



Ref. No.	Part No.	Description	Remark
< IC >			
IC002	8-749-923-29	IC RS-20ET	
IC003	8-759-822-37	IC LA7293M-TE	
< COIL >			
L002	1-412-939-11	INDUCTOR 1uH	
L003	1-412-939-11	INDUCTOR 1uH	
< JACK >			
J001	1-568-027-11	JACK, SMALL TYPE 1P (EXT MIC)	
< TRANSISTOR >			
Q002	8-729-402-63	TRANSISTOR 2SB1218A-Q	
< RESISTOR >			
R027	1-216-864-11	METAL CHIP 0 5% 1/16W	
R028	1-216-820-11	METAL CHIP 820 5% 1/16W	
R029	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R030	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R031	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R032	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R033	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R043	1-216-815-11	METAL CHIP 330 5% 1/16W	
R044	1-216-853-11	METAL CHIP 470K 5% 1/16W	
*****			
*	A-7072-000-A	SL-38 BOARD, COMPLETE	
		*****	
		(Ref. No. 4,000 Series)	
< CAPACITOR >			
C543	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C544	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C545	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C546	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C547	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C551	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C553	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C554	1-135-215-21	TANTAL. CHIP 6.8uF 20% 16V	
C555	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C556	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C557	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C558	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
< CONNECTOR >			
CN500	1-691-473-21	CONNECTOR, FFC/FPC 7P	
CN501	1-691-472-21	CONNECTOR, FFC/FPC 6P	
CN502	1-691-482-21	CONNECTOR, FFC/FPC 15P	

Ref. No.	Part No.	Description	Remark
< IC >			
IC507	8-759-165-47	IC MPC1780VFUEB	
< COIL >			
L505	1-414-078-11	INDUCTOR 10uH	
< TRANSISTOR >			
Q560	8-729-805-25	TRANSISTOR 2SB1121	
Q561	8-729-425-50	TRANSISTOR 2SB1462Q	
Q562	8-729-402-81	TRANSISTOR XN4501	
< RESISTOR >			
R562	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R563	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R564	1-216-864-11	METAL CHIP 0 5% 1/16W	
R565	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R566	1-218-857-11	METAL CHIP 2.7K 0.50% 1/16W	
R567	1-216-295-00	METAL CHIP 0 5% 1/10W	
R568	1-216-168-00	METAL GLAZE 56 5% 1/8W	
R569	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R570	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R571	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R572	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R590	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R591	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
< FLEXIBLE BOARD >			
W500	1-651-889-11	FP-48 FLEXIBLE BOARD	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD	

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## VC-138

## VC-145

Ref.No.	Part No.	Description	Remark
*	A-7063-961-A	VC-138 BOARD, COMPLETE (TR72/430) *****	
*	A-7066-018-A	VC-138 BOARD, COMPLETE (TR80) *****	
*	A-7066-080-A	VC-138 BOARD, COMPLETE (TR400/TR750) *****	
*	A-7063-955-A	VC-145 BOARD, COMPLETE (TR82) *****	
*	A-7066-007-A	VC-145 BOARD, COMPLETE (TR70) *****	
*	A-7066-084-A	VC-145 BOARD, COMPLETE (TR42) *****	
*	A-7066-088-A	VC-145 BOARD, COMPLETE (TR550) ***** (Ref. No. 1,000 Series)	
< CAPACITOR >			
C604	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C605	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C606	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C607	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C608	1-104-847-11	TANTAL. CHIP 22uF 20%	4V (TR42/TR72/TR82/TR430/TR550)
C609	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C610	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C611	1-164-360-11	CERAMIC CHIP 0.1uF	16V (TR42/TR72/TR82/TR430/TR550)
C613	1-162-974-11	CERAMIC CHIP 0.01uF	50V (TR42/TR72/TR82/TR430/TR550)
C614	1-162-974-11	CERAMIC CHIP 0.01uF	50V (TR42/TR72/TR82/TR430/TR550)
C616	1-135-091-21	TANTAL. CHIP 1uF 20%	16V
C617	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C618	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C619	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C620	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C621	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C622	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C623	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C624	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C627	1-162-946-11	CERAMIC CHIP 27PF 5%	50V
C628	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C629	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C630	1-162-946-11	CERAMIC CHIP 27PF 5%	50V
C631	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C632	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C633	1-162-946-11	CERAMIC CHIP 27PF 5%	50V (TR82/TR400/TR550/TR750)

Ref.No.	Part No.	Description	Remark
C633	1-162-947-11	CERAMIC CHIP 33PF 5%	50V (TR42/TR70/TR72/TR80/TR430)
C634	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C635	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V (TR82/TR400/TR550/TR750)
C636	1-164-360-11	CERAMIC CHIP 0.1uF	16V (TR82/TR400/TR550/TR750)
C637	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C638	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C639	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C699	1-162-954-11	CERAMIC CHIP 120PF 5%	50V (TR82/TR400/TR550/TR750)
C701	1-163-059-91	CERAMIC CHIP 0.01uF 10%	50V
C702	1-162-638-11	CERAMIC CHIP 1uF	16V
C703	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C704	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C705	1-135-145-11	TANTALUM CHIP 0.47uF 10%	35V
C706	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C708	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C709	1-135-214-21	TANTAL. CHIP 4.7uF 20%	20V
C710	1-162-971-11	CERAMIC CHIP 0.001uF	50V
C711	1-162-971-11	CERAMIC CHIP 0.001uF	50V
C712	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C713	1-107-685-11	TANTAL. CHIP 15uF 20%	6.3V
C714	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C715	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C716	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C717	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C718	1-162-637-11	CERAMIC CHIP 0.47uF	16V
C719	1-162-971-11	CERAMIC CHIP 0.001uF	50V
C720	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C721	1-162-916-11	CERAMIC CHIP 12PF 5%	50V
C722	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C724	1-162-925-11	CERAMIC CHIP 68PF 5%	50V (TR42/TR70/TR72/TR80/TR430)
C724	1-162-949-11	CERAMIC CHIP 47PF 5%	50V (TR82/TR400/TR550/TR750)
C725	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C726	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C727	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C728	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C729	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C730	1-163-077-00	CERAMIC CHIP 0.1uF 10%	25V (TR82/TR400/TR550/TR750)
C730	1-164-298-11	CERAMIC CHIP 0.15uF 10%	25V (TR42/TR70/TR72/TR80/TR430)
C731	1-135-091-21	TANTAL. CHIP 1uF 20%	16V
C732	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C733	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C734	1-135-091-21	TANTAL. CHIP 1uF 20%	16V
C735	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C737	1-162-946-11	CERAMIC CHIP 27PF 5%	50V



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C739	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	C789	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V (TR82/TR400/TR550/TR750)
C741	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	C790	1-164-299-11	CERAMIC CHIP	0.22uF 10% 25V (TR82/TR400/TR550/TR750)
C742	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C793	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)
C743	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C794	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR82/TR400/TR550/TR750)
C744	1-162-974-11	CERAMIC CHIP	0.01uF 50V	< CONNECTOR >			
C745	1-162-974-11	CERAMIC CHIP	0.01uF 50V	* CN601	1-764-395-21	CONNECTOR, BOARD TO BOARD 42P	
C746	1-164-360-11	CERAMIC CHIP	0.1uF 16V	CN701	1-750-630-11	CONNECTOR, FFC/FPC (ZIF) 16P	
C747	1-164-360-11	CERAMIC CHIP	0.1uF 16V	* CN751	1-764-528-11	CONNECTOR, FFC/FPC (ZIF) 21P	
C748	1-164-360-11	CERAMIC CHIP	0.1uF 16V	CN775	1-691-487-21	CONNECTOR, FFC/FPC 8P	(TR82/TR400/TR550/TR750)
C749	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	< TRIMMER >			
C750	1-162-971-11	CERAMIC CHIP	0.001uF 50V	CT701	1-141-356-11	CAP, ADJ	
C751	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	< DIODE >			
C752	1-162-971-11	CERAMIC CHIP	0.001uF 50V	D701	8-719-404-49	DIODE MA111	
C753	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D702	8-719-404-49	DIODE MA111	
C754	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D703	8-719-404-49	DIODE MA111	
C755	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D705	8-719-404-49	DIODE MA111	
C756	1-104-752-11	TANTAL. CHIP	33uF 20% 6.3V	< FILTER >			
C757	1-162-974-11	CERAMIC CHIP	0.01uF 50V	FL601	1-239-352-11	FILTER, LOW PASS	(TR82/TR400/TR550/TR750)
C771	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V (TR82/TR400/TR550/TR750)	FL601	1-239-766-11	FILTER, LOW PASS	(TR42/TR70/TR72/TR80/TR430)
C772	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V (TR82/TR400/TR550/TR750)	< IC >			
C773	1-164-299-11	CERAMIC CHIP	0.22uF 10% 25V (TR82/TR400/TR550/TR750)	IC601	8-759-044-78	IC AK6420F-E1	
C774	1-128-257-21	ELECT CHIP	33uF 20% 10V (TR82/TR400/TR550/TR750)	IC602	8-759-260-67	IC SC424608MC68HC11MA8FU	(TR42/TR70/TR72/TR80/TR82/TR430)
C775	1-128-257-21	ELECT CHIP	33uF 20% 10V (TR82/TR400/TR550/TR750)	IC602	8-759-277-18	IC SC424609MC68HC11MA8FU	(TR400/TR550/TR750)
C776	1-162-953-11	CERAMIC CHIP	100PF 5% 50V (TR82/TR400/TR550/TR750)	IC603	8-759-064-36	IC MB88346BPV	
C777	1-162-568-11	CERAMIC CHIP	0.33uF 10% 16V (TR82/TR400/TR550/TR750)	IC604	8-759-710-29	IC NJM2235M	(TR42/TR72/TR82/TR430/TR550)
C778	1-162-953-11	CERAMIC CHIP	100PF 5% 50V (TR82/TR400/TR550/TR750)	IC609	8-752-365-71	IC CXD2150R	(TR42/TR70/TR72/TR80/TR82/TR430)
C779	1-162-568-11	CERAMIC CHIP	0.33uF 10% 16V (TR82/TR400/TR550/TR750)	IC609	8-752-369-24	IC CXD2150AR	(TR400/TR550/TR750)
C780	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR82/TR400/TR550/TR750)	IC610	8-752-365-72	IC CXD2151R	
C781	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR82/TR400/TR550/TR750)	IC611	8-759-262-36	IC CXD2133BR	
C782	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)	IC613	8-759-247-06	IC CXD2152REL	(TR82/TR400/TR550/TR750)
C783	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)	IC614	8-759-255-09	IC uPD6461GS-802-GLG-E2	
C784	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR82/TR400/TR550/TR750)	IC701	8-752-355-07	IC CXD1267N	
C785	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR82/TR400/TR550/TR750)	IC702	8-752-365-73	IC CXD2405R	(TR82/TR400/TR550/TR750)
C786	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)	IC702	8-752-365-74	IC CXD1266R	(TR42/TR70/TR72/TR80/TR430)
C788	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V (TR82/TR400/TR550/TR750)	IC703	8-752-069-21	IC CXA1690Q	
				IC704	8-759-173-24	IC AD875JST-REEL	(TR70/TR72/TR80/TR430)



## VC-138

## VC-145

Ref.No.	Part No.	Description	Remark
IC704	8-759-263-29	IC HD49315FEB (TR42/TR82/TR400/TR550/TR750)	
IC705	8-752-365-76	IC CXD2407R	
IC751	8-759-701-24	IC NJM3414M	
IC752	8-759-058-52	IC XRA10324AF	
IC753	8-752-365-65	IC CXD2126N	
IC754	8-759-247-07	IC MPC17A34VMEL	
IC755	8-759-031-58	IC SC7SU04F	
IC772	8-759-234-77	IC TC4S66F (TR82/TR400/TR550/TR750)	
IC773	8-759-234-77	IC TC4S66F (TR82/TR400/TR550/TR750)	
IC774	8-759-058-45	IC NJM3403AV (TE2) (TR82/TR400/TR550/TR750)	
IC775	8-759-080-34	IC TA75W01FU-TE12R (TR82/TR400/TR550/TR750)	
IC776	8-759-248-78	IC MB88102PFV-G-BND-ER (TR82/TR400/TR550/TR750)	
IC777	8-752-850-54	IC CXP87132-010R (TR82/TR400/TR550/TR750)	
< COIL >			
L601	1-412-058-11	INDUCTOR CHIP 10uH	
L602	1-414-078-11	INDUCTOR 10uH	
L603	1-412-058-11	INDUCTOR CHIP 10uH	
L604	1-414-078-11	INDUCTOR 10uH	
L605	1-410-391-11	INDUCTOR CHIP 68uH	
L606	1-414-078-11	INDUCTOR 10uH	
L607	1-414-078-11	INDUCTOR 10uH (TR82/TR400/TR550/TR750)	
L608	1-412-006-31	INDUCTOR CHIP 10uH	
L609	1-412-979-21	INDUCTOR 1uH	
L610	1-412-979-21	INDUCTOR 1uH	
L611	1-412-052-21	INDUCTOR CHIP 1uH	
L612	1-412-052-21	INDUCTOR CHIP 1uH	
L613	1-412-052-21	INDUCTOR CHIP 1uH	
L614	1-412-052-21	INDUCTOR CHIP 1uH	
L702	1-412-058-11	INDUCTOR CHIP 10uH	
L703	1-412-058-11	INDUCTOR CHIP 10uH	
L704	1-412-058-11	INDUCTOR CHIP 10uH	
L705	1-412-058-11	INDUCTOR CHIP 10uH	
L706	1-412-058-11	INDUCTOR CHIP 10uH	
L751	1-412-062-11	INDUCTOR CHIP 47uH	
L752	1-412-058-11	INDUCTOR CHIP 10uH	
L753	1-412-058-11	INDUCTOR CHIP 10uH	
L775	1-412-058-11	INDUCTOR CHIP 10uH (TR82/TR400/TR550/TR750)	
L777	1-414-078-11	INDUCTOR 10uH (TR82/TR400/TR550/TR750)	
L778	1-414-078-11	INDUCTOR 10uH (TR82/TR400/TR550/TR750)	
< TRANSISTOR >			
Q604	8-729-010-60	TRANSISTOR MSA1586	
Q605	8-729-010-60	TRANSISTOR MSA1586	
Q606	8-729-010-75	TRANSISTOR MSC4116	
Q607	8-729-010-75	TRANSISTOR MSC4116	

Ref.No.	Part No.	Description	Remark
Q701	8-729-403-27	TRANSISTOR XN4401	
Q751	8-729-010-75	TRANSISTOR MSC4116	
Q752	8-729-015-76	TRANSISTOR UN5211	
< RESISTOR >			
R601	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R602	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R603	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R604	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R605	1-216-864-11	METAL CHIP 0 5% 1/16W	
R606	1-216-847-11	METAL CHIP 150K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R607	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R608	1-216-864-11	METAL CHIP 0 5% 1/16W	
R609	1-216-838-11	METAL CHIP 27K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R610	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R611	1-216-838-11	METAL CHIP 27K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R612	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R613	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R614	1-216-825-11	METAL CHIP 2.2K 5% 1/16W (TR70/TR80/TR400/TR750)	
R615	1-216-825-11	METAL CHIP 2.2K 5% 1/16W (TR70/TR80/TR400/TR750)	
R616	1-216-864-11	METAL CHIP 0 5% 1/16W (TR82)	
R619	1-216-803-11	METAL CHIP 33 5% 1/16W	
R620	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R621	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R622	1-216-864-11	METAL CHIP 0 5% 1/16W (TR70/TR80/TR400/TR750)	
R624	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR70/TR72/TR80/TR400/TR430/TR550/TR750)	
R626	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R627	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R628	1-216-834-11	METAL CHIP 12K 5% 1/16W (TR400/TR550/TR750)	
R629	1-216-832-11	METAL CHIP 8.2K 5% 1/16W (TR400/TR550/TR750)	
R629	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430)	
R630	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R631	1-216-864-11	METAL CHIP 0 5% 1/16W	
R634	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R635	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R636	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R637	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R638	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R639	1-216-864-11	METAL CHIP 0 5% 1/16W	
R640	1-216-815-11	METAL CHIP 330 5% 1/16W	





Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R643	1-216-833-11	METAL CHIP	10K 5% 1/16W	R720	1-216-843-11	METAL CHIP	68K 5% 1/16W (TR82/TR400/TR550/TR750)
R645	1-216-834-11	METAL CHIP	12K 5% 1/16W	R720	1-216-844-11	METAL CHIP	82K 5% 1/16W (TR70/TR72/TR80/TR430)
R646	1-216-818-11	METAL CHIP	560 5% 1/16W	R721	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR82/TR400/TR550/TR750)
R647	1-216-834-11	METAL CHIP	12K 5% 1/16W	R722	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR82/TR400/TR550/TR750)
R648	1-216-818-11	METAL CHIP	560 5% 1/16W	R723	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR72/TR80/TR430)
R649	1-216-841-11	METAL CHIP	47K 5% 1/16W	R724	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR82/TR400/TR550/TR750)
R650	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R725	1-216-841-11	METAL CHIP	47K 5% 1/16W
R651	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R739	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42)
R652	1-216-841-11	METAL CHIP	47K 5% 1/16W	R740	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR72/TR80/TR82/TR400/TR430/TR550/TR750)
R653	1-216-864-11	METAL CHIP	0 5% 1/16W	R741	1-218-855-11	METAL CHIP	2.2K 0.50% 1/16W
R656	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	R742	1-218-865-11	METAL CHIP	5.6K 0.50% 1/16W
R657	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R743	1-216-833-11	METAL CHIP	10K 5% 1/16W
R658	1-216-864-11	METAL CHIP	0 5% 1/16W	R744	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R659	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R745	1-216-837-11	METAL CHIP	22K 5% 1/16W
R661	1-216-841-11	METAL CHIP	47K 5% 1/16W	R746	1-216-837-11	METAL CHIP	22K 5% 1/16W
R662	1-216-821-11	METAL CHIP	1K 5% 1/16W	R747	1-216-820-11	METAL CHIP	820 5% 1/16W
R663	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R748	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R664	1-216-821-11	METAL CHIP	1K 5% 1/16W	R749	1-216-851-11	METAL CHIP	330K 5% 1/16W
R665	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R750	1-216-841-11	METAL CHIP	47K 5% 1/16W
R666	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R751	1-216-809-11	METAL CHIP	100 5% 1/16W
R667	1-216-820-11	METAL CHIP	820 5% 1/16W	R752	1-216-821-11	METAL CHIP	1K 5% 1/16W
R668	1-216-824-11	METAL CHIP	1.8K 5% 1/16W	R753	1-216-845-11	METAL CHIP	100K 5% 1/16W
R669	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R754	1-216-848-11	METAL CHIP	180K 5% 1/16W
R670	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R755	1-216-855-11	METAL CHIP	680K 5% 1/16W
R701	1-216-857-11	METAL CHIP	1M 5% 1/16W	R756	1-216-848-11	METAL CHIP	180K 5% 1/16W
R702	1-216-833-11	METAL CHIP	10K 5% 1/16W	R757	1-216-833-11	METAL CHIP	10K 5% 1/16W
R703	1-216-845-11	METAL CHIP	100K 5% 1/16W	R758	1-216-837-11	METAL CHIP	22K 5% 1/16W
R704	1-216-840-11	METAL CHIP	39K 5% 1/16W (TR42/TR82/TR400/TR550/TR750)	R759	1-216-837-11	METAL CHIP	22K 5% 1/16W
R705	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R760	1-216-826-11	METAL CHIP	2.7K 5% 1/16W
R709	1-216-845-11	METAL CHIP	100K 5% 1/16W	R761	1-216-842-11	METAL CHIP	56K 5% 1/16W
R710	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	R762	1-216-842-11	METAL CHIP	56K 5% 1/16W
R711	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R764	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R712	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	R765	1-216-833-11	METAL CHIP	10K 5% 1/16W (TR82/TR400/TR550/TR750)
R713	1-216-807-11	METAL CHIP	68 5% 1/16W	R766	1-216-835-11	METAL CHIP	15K 5% 1/16W (TR82/TR400/TR550/TR750)
R714	1-216-864-11	METAL CHIP	0 5% 1/16W	R767	1-216-850-11	METAL CHIP	270K 5% 1/16W (TR82/TR400/TR550/TR750)
R715	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R768	1-216-833-11	METAL CHIP	10K 5% 1/16W (TR82/TR400/TR550/TR750)
R716	1-218-847-11	METAL CHIP	1K 0.50% 1/16W	R769	1-216-850-11	METAL CHIP	270K 5% 1/16W (TR82/TR400/TR550/TR750)
R717	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R770	1-216-835-11	METAL CHIP	15K 5% 1/16W (TR82/TR400/TR550/TR750)
R718	1-216-807-11	METAL CHIP	68 5% 1/16W	R771	1-216-803-11	METAL CHIP	33 5% 1/16W (TR82/TR400/TR550/TR750)
R719	1-218-876-11	METAL CHIP	16K 0.50% 1/16W				
R720	1-216-841-11	METAL CHIP	47K 5% 1/16W (TR42)				



## VC-138

## VC-145

## VF-65

Ref. No.	Part No.	Description	Remark
R772	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R773	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R774	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R775	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R776	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R777	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R778	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR82/TR400/TR550/TR750)	
R779	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R780	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R781	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR82/TR400/TR550/TR750)	
R782	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R783	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R786	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R787	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R788	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R789	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R790	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR82/TR400/TR550/TR750)	
R791	1-216-864-11	METAL CHIP 0 5% 1/16W (TR82/TR400/TR550/TR750)	
R792	1-216-857-11	METAL CHIP 1M 5% 1/16W (TR82/TR400/TR550/TR750)	
R793	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
< VIBRATOR >			
X601	1-760-081-21	VIBRATOR, CERAMIC (24MHz)	
X701	1-760-320-11	VIBRATOR, CRYSTAL (28.6363MHz)	
X775	1-579-553-11	VIBRATOR (12MHz) (TR82/TR400/TR550/TR750)	
*****			
*	A-7063-957-A	VF-65 BOARD, COMPLETE	
		*****	
		(TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
		(Ref. No. 8,000 Series)	
< CAPACITOR >			
C901	1-124-635-00	ELECT 220uF 20% 6.3V	

Ref. No.	Part No.	Description	Remark
C902	1-163-038-11	CERAMIC CHIP 0.1uF	25V
C903	1-135-091-21	TANTAL. CHIP 1uF	20% 16V
C904	1-163-011-11	CERAMIC CHIP 0.0015uF	10% 50V
C905	1-104-753-11	TANTAL. CHIP 47uF	20% 6.3V
C906	1-162-638-11	CERAMIC CHIP 1uF	16V
C907	1-137-306-11	FILM CHIP 0.1uF	5% 16V
C908	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C909	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
△C910	1-164-758-11	CERAMIC CHIP 0.0039uF	5% 50V
△C911	1-164-715-11	CERAMIC CHIP 0.0068uF	5% 50V
C912	1-127-532-11	ELECT (SOLID) 47uF	20% 6.3V
C913	1-124-577-11	ELECT 82uF	20% 10V
C914	1-128-007-11	ELECT CHIP 2.2uF	20% 35V
C915	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C916	1-164-611-11	CERAMIC CHIP 0.001uF	10% 500V
< CONNECTOR >			
CN901	1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
CN902	1-573-290-11	PIN, CONNECTOR (1.5MM) (SMD) 4P	
< DIODE >			
D901	8-719-404-19	DIODE LN1251 (TALLY)	
D903	8-719-400-20	DIODE MA152WA	
< IC >			
IC901	8-759-196-14	IC BA7149F-E2	
< COIL >			
L901	1-412-031-11	INDUCTOR CHIP 47uH	
L902	1-410-389-31	INDUCTOR CHIP 47uH	
△L903	1-402-680-21	COIL, FERRITE (HLC)	
< TRANSISTOR >			
△Q901	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q902	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q903	8-729-216-31	TRANSISTOR 2SA1163-G	
Q904	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
< RESISTOR >			
R901	1-216-041-00	METAL CHIP 470 5% 1/10W	
R902	1-216-041-00	METAL CHIP 470 5% 1/10W	
R903	1-216-035-00	METAL CHIP 270 5% 1/10W	
△R904	1-216-073-00	METAL CHIP 10K 5% 1/10W	
△R905	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R906	1-216-047-00	METAL CHIP 820 5% 1/10W	
R907	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R908	1-216-111-00	METAL CHIP 390K 5% 1/10W	
R909	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R910	1-216-077-00	METAL CHIP 15K 5% 1/10W	

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.



Ref. No.	Part No.	Description	Remark		
R911	1-216-160-00	METAL GLAZE	27	5%	1/8W
R912	1-216-121-00	METAL CHIP	1M	5%	1/10W
R913	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R914	1-216-025-00	METAL CHIP	100	5%	1/10W
R915	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R916	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R917	1-216-693-11	METAL CHIP	56K	0.5%	1/10W
R918	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R919	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R920	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R921	1-216-311-00	METAL CHIP	6.8	5%	1/10W
R922	1-216-101-00	METAL CHIP	150K	5%	1/10W
R923	1-216-121-00	METAL CHIP	1M	5%	1/10W
R924	1-216-131-11	METAL CHIP	2.7M	5%	1/10W
R925	1-216-131-11	METAL CHIP	2.7M	5%	1/10W
R926	1-216-295-00	METAL CHIP	0	5%	1/10W
R927	1-216-049-00	METAL CHIP	1K	5%	1/10W
R928	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
< VARIABLE RESISTOR >					
RV903	1-238-086-11	RES, ADJ, CERMET	470		
RV904	1-223-566-11	RES, ADJ, METAL GLAZE	1M		
< TRANSFORMER >					
△T901	1-453-124-11	TRANSFORMER ASSY, FLYBACK			
< THERMISTOR >					
TH901	1-809-350-21	THERMISTOR, NTC (2125)			
< SOCKET >					
△W901	1-540-019-21	SOCKET ASSY, CRT			
*****					
*	A-7066-010-A	VF-66 BOARD, COMPLETE (TR70/TR80)			
*****					
(Ref. No. 4,000 Series)					
< CAPACITOR >					
C851	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C852	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C853	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V
C854	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C855	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C856	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C857	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C858	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C859	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C860	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C861	1-104-917-11	TANTAL. CHIP	15uF	20%	20V

Ref. No.	Part No.	Description	Remark		
C862	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C863	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C864	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C865	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C866	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C867	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C868	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C869	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C870	1-162-974-11	CERAMIC CHIP	0.01uF		50V
< CONNECTOR >					
CN851	1-573-354-11	CONNECTOR, FFC/FPC 14P			
CN852	1-573-354-11	CONNECTOR, FFC/FPC 14P			
CN853	1-573-811-11	CONNECTOR, BOARD TO BOARD 12P			
< DIODE >					
D851	8-719-404-19	DIODE LN1251C (TALLY)			
D852	8-719-043-70	DIODE MAGS121			
D853	8-719-802-36	DIODE 1SS250			
< IC >					
IC851	8-759-097-75	IC MB3789PFV-G-BND-ER			
IC852	8-759-508-68	IC XRA10358F-E2			
< COIL >					
L851	1-412-033-11	INDUCTOR CHIP 220uH			
L852	1-412-029-11	INDUCTOR CHIP 10uH			
L853	1-412-033-11	INDUCTOR CHIP 220uH			
< TRANSISTOR >					
Q851	8-729-024-60	TRANSISTOR MTD6N15T4			
Q852	8-729-402-84	TRANSISTOR XN4601			
Q853	8-729-923-62	TRANSISTOR DTA123JK			
< RESISTOR >					
R851	1-216-819-11	METAL CHIP	680	5%	1/16W
R852	1-216-841-11	METAL CHIP	47K	5%	1/16W
R853	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R854	1-218-901-11	METAL CHIP	180K	0.50%	1/16W
R855	1-216-840-11	METAL CHIP	39K	5%	1/16W
R856	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R857	1-218-903-11	METAL CHIP	220K	0.50%	1/16W
R858	1-216-841-11	METAL CHIP	47K	5%	1/16W
R859	1-216-849-11	METAL CHIP	220K	5%	1/16W
R860	1-216-843-11	METAL CHIP	68K	5%	1/16W
R861	1-216-843-11	METAL CHIP	68K	5%	1/16W
R862	1-216-838-11	METAL CHIP	27K	5%	1/16W
R863	1-216-847-11	METAL CHIP	150K	5%	1/16W
R864	1-216-840-11	METAL CHIP	39K	5%	1/16W
R865	1-216-841-11	METAL CHIP	47K	5%	1/16W

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Ne les remplacer que par une pièce portant le numéro spécifié.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R867	1-216-850-11	METAL CHIP	270K 5% 1/16W	C932	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R868	1-216-864-11	METAL CHIP	0 5% 1/16W	C933	1-164-156-11	CERAMIC CHIP	0.1uF 25V
R869	1-216-843-11	METAL CHIP	68K 5% 1/16W	C934	1-135-145-11	TANTALUM CHIP	0.47uF 10% 35V
R870	1-216-842-11	METAL CHIP	56K 5% 1/16W	C935	1-135-179-21	TANTAL. CHIP	2.2uF 20% 16V
R871	1-216-850-11	METAL CHIP	270K 5% 1/16W	C936	1-162-967-11	CERAMIC CHIP	0.0033uF 10% 50V
R872	1-216-833-11	METAL CHIP	10K 5% 1/16W	C937	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
R873	1-216-851-11	METAL CHIP	330K 5% 1/16W	C938	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
R874	1-216-847-11	METAL CHIP	150K 5% 1/16W	C939	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
R875	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	C940	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
R876	1-216-833-11	METAL CHIP	10K 5% 1/16W	C941	1-164-357-11	CERAMIC CHIP	1000PF 5% 50V
R877	1-216-794-11	METAL CHIP	5.6 5% 1/16W	C942	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R878	1-216-804-11	METAL CHIP	39 5% 1/16W	C943	1-164-156-11	CERAMIC CHIP	0.1uF 25V
R879	1-216-837-11	METAL CHIP	22K 5% 1/16W	C945	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R880	1-216-839-11	METAL CHIP	33K 5% 1/16W	C946	1-135-179-21	TANTAL. CHIP	2.2uF 20% 16V
R881	1-216-853-11	METAL CHIP	470K 5% 1/16W	C947	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R891	1-216-296-00	METAL CHIP	0 5% 1/8W	C948	1-162-974-11	CERAMIC CHIP	0.01uF 50V
< TRANSFORMER >				C949	1-135-178-11	TANTAL. CHIP	1.5uF 20% 20V
△T851	0-396-458-00			C950	1-162-974-11	CERAMIC CHIP	0.01uF 50V
*****				C951	1-162-974-11	CERAMIC CHIP	0.01uF 50V
* A-7066-011-A VF-67 BOARD, COMPLETE (TR70/TR80)				C953	1-164-346-11	CERAMIC CHIP	1uF 16V
*****				C954	1-162-974-11	CERAMIC CHIP	0.01uF 50V
< CAPACITOR >				< CONNECTOR >			
C901	1-162-974-11	CERAMIC CHIP	0.01uF 50V	CN901	1-573-354-11	CONNECTOR, FFC/FPC 14P	
C902	1-162-974-11	CERAMIC CHIP	0.01uF 50V	* CN902	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P	
C903	1-162-974-11	CERAMIC CHIP	0.01uF 50V	* CN903	1-573-356-11	CONNECTOR, FFC/FPC 16P	
C904	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	< DIODE >			
C905	1-135-091-21	TANTAL. CHIP	1uF 20% 16V	D901	8-719-025-91	DIODE MA365(E)	
C906	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V	D903	8-719-404-49	DIODE MA111	
C907	1-135-091-21	TANTAL. CHIP	1uF 20% 16V	< IC >			
C908	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	IC901	8-752-067-59	IC CXA1785R	
C909	1-162-974-11	CERAMIC CHIP	0.01uF 50V	IC902	8-752-362-78	IC CXD2403R	
C910	1-162-974-11	CERAMIC CHIP	0.01uF 50V	IC903	8-759-251-40	IC MB88E346PFV-G-BND-ER	
C911	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	< COIL >			
C913	1-164-156-11	CERAMIC CHIP	0.1uF 25V	L901	1-412-951-11	INDUCTOR 10uH	
C914	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L902	1-412-962-11	INDUCTOR 82uH	
C915	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L904	1-412-951-11	INDUCTOR 10uH	
C916	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L905	1-412-949-21	INDUCTOR 6.8uH	
C917	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L906	1-412-959-11	INDUCTOR 47uH	
C920	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V	< TRANSISTOR >			
C921	1-162-974-11	CERAMIC CHIP	0.01uF 50V	Q901	8-729-402-84	TRANSISTOR XN4601	
C925	1-164-156-11	CERAMIC CHIP	0.1uF 25V	Q902	8-729-402-42	TRANSISTOR UN5213	
C926	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	< RESISTOR >			
C927	1-162-974-11	CERAMIC CHIP	0.01uF 50V	R902	1-216-836-11	METAL CHIP	18K 5% 1/16W
C928	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V	R903	1-216-842-11	METAL CHIP	56K 5% 1/16W
C929	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V				
C930	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V				
C931	1-162-974-11	CERAMIC CHIP	0.01uF 50V				

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Ne les remplacer que par une pièce portant le numéro spécifié.

Roll No.	Part No.	Description	Unit	Qty	Rate
001	1-100-000-01	WATER, CUP	100	10	1000
002	1-100-000-02	WATER, CUP	100	10	1000
003	1-100-000-03	WATER, CUP	100	10	1000
004	1-100-000-04	WATER, CUP	100	10	1000
005	1-100-000-05	WATER, CUP	100	10	1000
006	1-100-000-06	WATER, CUP	100	10	1000
007	1-100-000-07	WATER, CUP	100	10	1000
008	1-100-000-08	WATER, CUP	100	10	1000
009	1-100-000-09	WATER, CUP	100	10	1000
010	1-100-000-10	WATER, CUP	100	10	1000
011	1-100-000-11	WATER, CUP	100	10	1000
012	1-100-000-12	WATER, CUP	100	10	1000
013	1-100-000-13	WATER, CUP	100	10	1000
014	1-100-000-14	WATER, CUP	100	10	1000
015	1-100-000-15	WATER, CUP	100	10	1000
016	1-100-000-16	WATER, CUP	100	10	1000
017	1-100-000-17	WATER, CUP	100	10	1000
018	1-100-000-18	WATER, CUP	100	10	1000
019	1-100-000-19	WATER, CUP	100	10	1000
020	1-100-000-20	WATER, CUP	100	10	1000

100

[illegible]

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1. **THEORY** 2. **EXPERIMENT** 3. **CONCLUSION** 4. **REFERENCES**

Year	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028	2028-2029	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	2037-2038	2038-2039	2039-2040	2040-2041	2041-2042	2042-2043	2043-2044	2044-2045	2045-2046	2046-2047	2047-2048	2048-2049	2049-2050	2050-2051	2051-2052	2052-2053	2053-2054	2054-2055	2055-2056	2056-2057	2057-2058	2058-2059	2059-2060	2060-2061	2061-2062	2062-2063	2063-2064	2064-2065	2065-2066	2066-2067	2067-2068	2068-2069	2069-2070	2070-2071	2071-2072	2072-2073	2073-2074	2074-2075	2075-2076	2076-2077	2077-2078	2078-2079	2079-2080	2080-2081	2081-2082	2082-2083	2083-2084	2084-2085	2085-2086	2086-2087	2087-2088	2088-2089	2089-2090	2090-2091	2091-2092	2092-2093	2093-2094	2094-2095	2095-2096	2096-2097	2097-2098	2098-2099	2099-2100	2100-2101	2101-2102	2102-2103	2103-2104	2104-2105	2105-2106	2106-2107	2107-2108	2108-2109	2109-2110	2110-2111	2111-2112	2112-2113	2113-2114	2114-2115	2115-2116	2116-2117	2117-2118	2118-2119	2119-2120	2120-2121	2121-2122	2122-2123	2123-2124	2124-2125	2125-2126	2126-2127	2127-2128	2128-2129	2129-2130	2130-2131	2131-2132	2132-2133	2133-2134	2134-2135	2135-2136	2136-2137	2137-2138	2138-2139	2139-2140	2140-2141	2141-2142	2142-2143	2143-2144	2144-2145	2145-2146	2146-2147	2147-2148	2148-2149	2149-2150	2150-2151	2151-2152	2152-2153	2153-2154	2154-2155	2155-2156	2156-2157	2157-2158	2158-2159	2159-2160	2160-2161	2161-2162	2162-2163	2163-2164	2164-2165	2165-2166	2166-2167	2167-2168	2168-2169	2169-2170	2170-2171	2171-2172	2172-2173	2173-2174	2174-2175	2175-2176	2176-2177	2177-2178	2178-2179	2179-2180	2180-2181	2181-2182	2182-2183	2183-2184	2184-2185	2185-2186	2186-2187	2187-2188	2188-2189	2189-2190	2190-2191	2191-2192	2192-2193	2193-2194	2194-2195	2195-2196	2196-2197	2197-2198	2198-2199	2199-2200	2200-2201	2201-2202	2202-2203	2203-2204	2204-2205	2205-2206	2206-2207	2207-2208	2208-2209	2209-2210	2210-2211	2211-2212	2212-2213	2213-2214	2214-2215	2215-2216	2216-2217	2217-2218	2218-2219	2219-2220	2220-2221	2221-2222	2222-2223	2223-2224	2224-2225	2225-2226	2226-2227	2227-2228	2228-2229	2229-2230	2230-2231	2231-2232	2232-2233	2233-2234	2234-2235	2235-2236	2236-2237	2237-2238	2238-2239	2239-2240	2240-2241	2241-2242	2242-2243	2243-2244	2244-2245	2245-2246	2246-2247	2247-2248	2248-2249	2249-2250	2250-2251	2251-2252</
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Ref. No.	Part No.	Description	QTY	Unit Price	Total Price
0001	1-100-01-01	CHASSIS	1	1.00	1.00
0002	1-100-01-02	CHASSIS	1	1.00	1.00
0003	1-100-01-03	CHASSIS	1	1.00	1.00
0004	1-100-01-04	CHASSIS	1	1.00	1.00
0005	1-100-01-05	CHASSIS	1	1.00	1.00
0006	1-100-01-06	CHASSIS	1	1.00	1.00
0007	1-100-01-07	CHASSIS	1	1.00	1.00
0008	1-100-01-08	CHASSIS	1	1.00	1.00
0009	1-100-01-09	CHASSIS	1	1.00	1.00
0010	1-100-01-10	CHASSIS	1	1.00	1.00
0011	1-100-01-11	CHASSIS	1	1.00	1.00
0012	1-100-01-12	CHASSIS	1	1.00	1.00
0013	1-100-01-13	CHASSIS	1	1.00	1.00
0014	1-100-01-14	CHASSIS	1	1.00	1.00
0015	1-100-01-15	CHASSIS	1	1.00	1.00
0016	1-100-01-16	CHASSIS	1	1.00	1.00
0017	1-100-01-17	CHASSIS	1	1.00	1.00
0018	1-100-01-18	CHASSIS	1	1.00	1.00
0019	1-100-01-19	CHASSIS	1	1.00	1.00
0020	1-100-01-20	CHASSIS	1	1.00	1.00
0021	1-100-01-21	CHASSIS	1	1.00	1.00
0022	1-100-01-22	CHASSIS	1	1.00	1.00
0023	1-100-01-23	CHASSIS	1	1.00	1.00
0024	1-100-01-24	CHASSIS	1	1.00	1.00
0025	1-100-01-25	CHASSIS	1	1.00	1.00
0026	1-100-01-26	CHASSIS	1	1.00	1.00
0027	1-100-01-27	CHASSIS	1	1.00	1.00
0028	1-100-01-28	CHASSIS	1	1.00	1.00
0029	1-100-01-29	CHASSIS	1	1.00	1.00
0030	1-100-01-30	CHASSIS	1	1.00	1.00
0031	1-100-01-31	CHASSIS	1	1.00	1.00
0032	1-100-01-32	CHASSIS	1	1.00	1.00
0033	1-100-01-33	CHASSIS	1	1.00	1.00
0034	1-100-01-34	CHASSIS	1	1.00	1.00
0035	1-100-01-35	CHASSIS	1	1.00	1.00
0036	1-100-01-36	CHASSIS	1	1.00	1.00
0037	1-100-01-37	CHASSIS	1	1.00	1.00
0038	1-100-01-38	CHASSIS	1	1.00	1.00
0039	1-100-01-39	CHASSIS	1	1.00	1.00
0040	1-100-01-40	CHASSIS	1	1.00	1.00
0041	1-100-01-41	CHASSIS	1	1.00	1.00
0042	1-100-01-42	CHASSIS	1	1.00	1.00
0043	1-100-01-43	CHASSIS	1	1.00	1.00
0044	1-100-01-44	CHASSIS	1	1.00	1.00
0045	1-100-01-45	CHASSIS	1	1.00	1.00
0046	1-100-01-46	CHASSIS	1	1.00	1.00
0047	1-100-01-47	CHASSIS	1	1.00	1.00
0048	1-100-01-48	CHASSIS	1	1.00	1.00
0049	1-100-01-49	CHASSIS	1	1.00	1.00
0050	1-100-01-50	CHASSIS	1	1.00	1.00

CHARGE	1-877-884-11	COMMERCIAL	RECEIVED: 1-87
* CHARGE	1-877-884-11	COMMERCIAL	BOOKED TO BUREAU 1-87
* CHARGE	1-877-884-11	COMMERCIAL	RECEIVED: 1-87



	1980	1985	1990	1995	2000
Population	167,000	175,000	185,000	195,000	205,000
GDP	\$1.2 billion	\$1.5 billion	\$1.8 billion	\$2.1 billion	\$2.4 billion
Unemployment rate	12%	10%	8%	7%	6%
Inflation rate	5%	4%	3%	2%	1%

	1980	1985	1990
1980	1.00	0.76	0.60
1985	0.76	1.00	0.76
1990	0.60	0.76	1.00

1001	8-10-10-10	10	100100
1002	8-10-10-10	10	100100
1003	8-10-10-10	10	100100

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LINE	0-23-001-01	WOLFRUM	1.00
LINE	0-23-002-01	WOLFRUM	1.00
LINE	0-23-003-01	WOLFRUM	1.00
LINE	0-23-004-01	WOLFRUM	1.00
LINE	0-23-005-01	WOLFRUM	1.00

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1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405</
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The components identified by parties in a formal dispute with each other are often mutually exclusive.

Les renseignements identifiés par ces  
sources de nos collègues pour la  
sécurité.



Ref.No.	Part No.	Description	Remark
R904	1-216-857-11	METAL CHIP	1M 5% 1/16W
R906	1-216-841-11	METAL CHIP	47K 5% 1/16W
R907	1-216-833-11	METAL CHIP	10K 5% 1/16W
R908	1-216-821-11	METAL CHIP	1K 5% 1/16W
R910	1-216-814-11	METAL CHIP	270 5% 1/16W
R911	1-216-864-11	METAL CHIP	0 5% 1/16W
R912	1-216-821-11	METAL CHIP	1K 5% 1/16W
R913	1-220-397-11	METAL GLAZE	4.7M 5% 1/16W
R914	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
R919	1-216-839-11	METAL CHIP	33K 5% 1/16W
R920	1-216-839-11	METAL CHIP	33K 5% 1/16W
R921	1-216-857-11	METAL CHIP	1M 5% 1/16W
R922	1-216-839-11	METAL CHIP	33K 5% 1/16W
R923	1-216-839-11	METAL CHIP	33K 5% 1/16W
R924	1-216-864-11	METAL CHIP	0 5% 1/16W
R925	1-216-830-11	METAL CHIP	5.6K 5% 1/16W
R926	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
R930	1-216-833-11	METAL CHIP	10K 5% 1/16W
R931	1-216-839-11	METAL CHIP	33K 5% 1/16W
R933	1-216-864-11	METAL CHIP	0 5% 1/16W
R934	1-216-821-11	METAL CHIP	1K 5% 1/16W
R936	1-218-873-11	METAL CHIP	12K 0.50% 1/16W
R937	1-218-905-11	METAL CHIP	270K 0.50% 1/16W
R938	1-216-849-11	METAL CHIP	220K 5% 1/16W
R939	1-216-837-11	METAL CHIP	22K 5% 1/16W
R946	1-216-821-11	METAL CHIP	33K 5% 1/16W
R947	1-216-807-11	METAL CHIP	68 5% 1/16W
R948	1-216-807-11	METAL CHIP	68 5% 1/16W
R949	1-216-807-11	METAL CHIP	68 5% 1/16W
R953	1-216-840-11	METAL CHIP	39K 5% 1/16W
R954	1-216-840-11	METAL CHIP	39K 5% 1/16W
R959	1-216-844-11	METAL CHIP	82K 5% 1/16W
R960	1-216-845-11	METAL CHIP	100K 5% 1/16W
R961	1-216-850-11	METAL CHIP	270K 5% 1/16W
R969	1-216-839-11	METAL CHIP	33K 5% 1/16W
R970	1-216-839-11	METAL CHIP	33K 5% 1/16W
R971	1-216-844-11	METAL CHIP	82K 5% 1/16W
R973	1-216-839-11	METAL CHIP	33K 5% 1/16W
R974	1-216-839-11	METAL CHIP	33K 5% 1/16W
< VIBRATOR >			
X901	1-579-466-11	VIBRATOR, CRYSTAL (3.58MHz)	

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Ref.No.	Part No.	Description	Remark
*	A-7063-959-A	VS-104 BOARD, COMPLETE (TR72)	*****
*	A-7066-008-A	VS-104 BOARD, COMPLETE (TR80)	*****
*	A-7066-079-A	VS-104 (H) BOARD, COMPLETE (TR400)	*****
*	A-7066-086-A	VS-104 BOARD, COMPLETE (TR430)	*****
*	A-7066-134-A	VS-104 (H) BOARD, COMPLETE (TR750)	*****
*	A-7063-953-A	VS-112 BOARD, COMPLETE (TR82)	*****
*	A-7066-019-A	VS-112 BOARD, COMPLETE (TR70)	*****
*	A-7066-047-A	VS-112 (LL) BOARD, COMPLETE (TR42)	*****
*	A-7066-085-A	VS-112 BOARD, COMPLETE (TR550)	*****
(Ref. No. 30,000 Series)			
< CAPACITOR >			
C101	1-162-921-11	CERAMIC CHIP 33PF 5% 50V	(TR42/TR70/TR72/TR80/TR82/TR430/TR550)
C102	1-162-911-11	CERAMIC CHIP 6PF 0.5PF 50V	(TR400/TR750)
C102	1-162-922-11	CERAMIC CHIP 39PF 5% 50V	(TR42/TR70/TR72/TR80/TR82/TR430/TR550)
C103	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C104	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C106	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C107	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C108	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C109	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C110	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C111	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C112	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C113	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C114	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C115	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C116	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C117	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V	
C118	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V	
C119	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C120	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C121	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C122	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C123	1-162-974-11	CERAMIC CHIP 0.01uF 50V	



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C124	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C172	1-162-921-11	CERAMIC CHIP 33PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
C128	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C173	1-164-155-11	CERAMIC CHIP 75PF 5% 50V (TR400/TR750)	
C131	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C175	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V (TR400/TR750)	
C134	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C176	1-162-921-11	CERAMIC CHIP 33PF 5% 50V (TR400/TR750)	
C136	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C177	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C137	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	C178	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C143	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V	C179	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C144	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V	C190	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C145	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V	C202	1-162-944-11	CERAMIC CHIP 18PF 5% 50V (TR400/TR750)	
C146	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C203	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C147	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C204	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C148	1-162-958-11	CERAMIC CHIP	270PF 5% 50V	C205	1-162-974-11	CERAMIC CHIP 0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
C149	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C206	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C150	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C207	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C151	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C208	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C152	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C209	1-126-246-11	ELECT CHIP 220uF 20% 4V	
C153	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C210	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C154	1-162-945-11	CERAMIC CHIP	22PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C211	1-135-091-21	TANTAL. CHIP 1uF 20% 16V	
C155	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR400/TR750)	C212	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C157	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	C213	1-135-176-21	TANTALUM CHIP 0.68uF 10% 20V	
C158	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C214	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C159	1-162-922-11	CERAMIC CHIP	39PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C215	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C160	1-162-946-11	CERAMIC CHIP	27PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C216	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C161	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	C217	1-135-091-21	TANTAL. CHIP 1uF 20% 16V	
C163	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C218	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C164	1-162-942-11	CERAMIC CHIP	12PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C220	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C165	1-162-956-11	CERAMIC CHIP	180PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C221	1-164-005-11	CERAMIC CHIP 0.47uF 25V (TR400/TR750)	
C166	1-162-958-11	CERAMIC CHIP	270PF 5% 50V	C222	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C167	1-162-926-11	CERAMIC CHIP	82PF 5% 50V (TR72/TR80/TR400/TR430/TR750)	C223	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C167	1-164-382-11	CERAMIC CHIP	91PF 5% 50V (TR42/TR70/TR82/TR550)	C225	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C168	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C226	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C169	1-162-949-11	CERAMIC CHIP	47PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C227	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C170	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V (TR400/TR750)	C228	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C171	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (TR400/TR750)	C229	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
				C230	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	
				C231	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
				C234	1-162-957-11	CERAMIC CHIP 220PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
				C234	1-164-471-11	CERAMIC CHIP 680PF 5% 50V (TR400/TR750)	
				C235	1-126-207-11	ELECT CHIP 33uF 20% 4V	
				C237	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
				C238	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
				C239	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
				C240	1-164-392-11	CERAMIC CHIP 390PF 5% 50V	



### 1-1-3. Precautions

#### 1. Switch settings

Adjust the switches to the following positions, and adjust without loading the cassette tape, unless specified otherwise.

1. Camera/player power switch  
(Control switch block (Control switch block (CK board)) .....Camera
2. Standby switch (Control switch block (FK board)) .. Standby
3. PROGRAM AE button (Control switch block (CK board))  
.....Off
4. FOCUS switch (Control switch block (CK board)) ...Manual
5. BACK LIGHT button (Control switch block (CK board))  
.....Off
6. STEADY SHOT button (CCD-TR82/TR400/TR550/TR750)  
(Control switch block (CK board)).....Off

#### 2. Adjusting Procedure

Adjust in the given order.

#### 3. Subject

- 1) Color bar chart (Standard picture frame)  
Adjust the picture frame as shown in Fig. 7-1-4. if adjustments are performed using the color bar chart.  
(Standard picture frame)
- 2) White pattern (Standard picture frame)  
Remove the color bar chart from the pattern box, and so that the white pattern will be displayed.  
Don't touch the zoom switch.

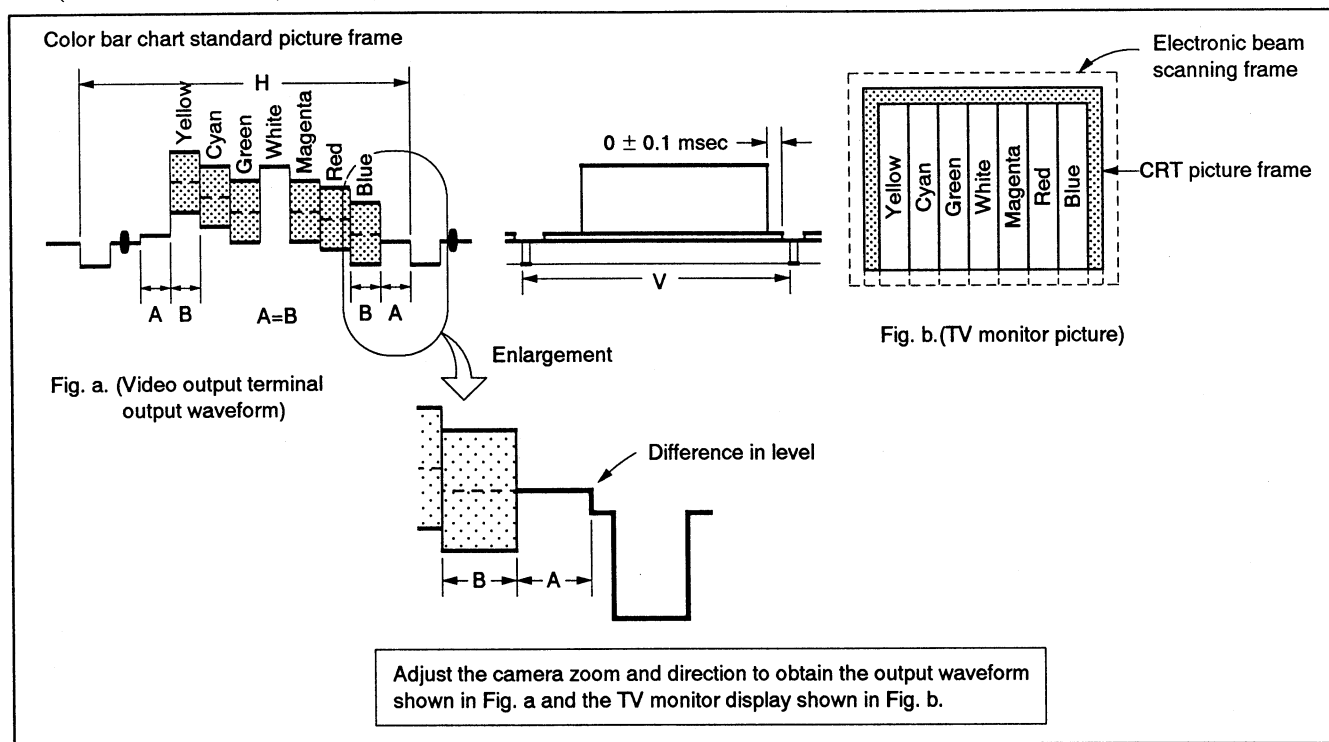


Fig. 7-1-4.

#### 3) Chart for flange back adjustment

Combine a white A0 size (1189 mm× 841 mm) paper to a black one, and make the chart shown in Fig. 7-1-5.

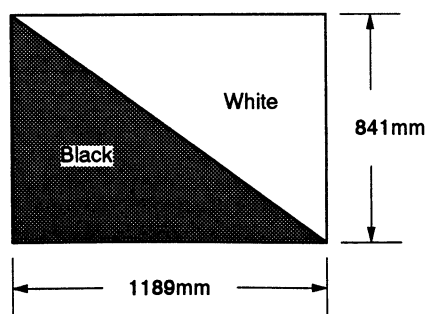


Fig. 7-1-5.

**Note:** Use the non-reflecting and non-glazing vellum paper whose size is more than A0, and make the boundary between white and black to be smoothly flat.

## 1-1-2. Precautions

### 1. Switch settings

Adjust the switches to the following positions, and adjust without switching the power supply, unless specified otherwise.

1. **Color display power switch**  
(Control switch block (Control switch block (CR board)) — **On**)
2. **Steadily rotate** (Control switch block (FR board)) — **Steadily**
3. **PROGRAM AD button** (Control switch block (CR board)) — **Off**
4. **FOCUS switch** (Control switch block (CR board)) — **Manual**
5. **BACK LIGHT button** (Control switch block (CR board)) — **Off**
6. **STEADY SHOT button** (CCD TRIGGER/VIDEO TRIGGER board) (Control switch block (CR board)) — **Off**

### 2. Adjusting Procedure

Adjust in the given order.

#### 1. Subject

- 1) **Color bar chart** (Standard picture frame)  
Adjust the picture frame as shown in Fig. 7-1-4. If adjustments are performed using the color bar chart, (Standard picture frame)
- 2) **White pattern** (Standard picture frame)  
Remove the color bar chart from the picture box, and use the white pattern will be displayed.  
Don't touch the screen surface.

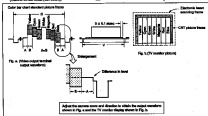


Fig. 7-1-4.

#### 2) Check for fringe/back adjustment

Consider a white A4 size (210 mm × 297 mm) paper in a black box, and make the chart shown in Fig. 7-1-5.



Fig. 7-1-5.

**Notes:** Use the non-reflecting and non-glazing yellow paper whose size is more than A4, and make the boundary between white and black as horizontally flat.

#### 1-1-4. Adjusting Remote Commander

The camera section is adjusted by changing the constant or coefficient of the digital signal processing calculation, or modifying the output voltage of the EVR IC (VC board IC603). This is controlled by the camera micro processor (VC board IC602), which reads the data written in the nonvolatile memory (VC board IC601: EEPROM), and transmits it to the digital signal processing circuit and EVR.

To perform adjustments, adjustment data written in the nonvolatile memory must be rewritten, using the adjusting remote commander.

The adjusting remote commander uses the remote commander signal line (LANC) to communicate mutually with the camera microprocessor. The page, address and the up/down commands of the data are transmitted from the adjusting remote commander to the camera micro processor. And, the page, address, and data are transmitted for the vice versa.

##### 1. Using the adjusting remote commander

- 1) Connect the adjusting remote commander to the remote terminal.
- 2) Adjust the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 7-1-6.

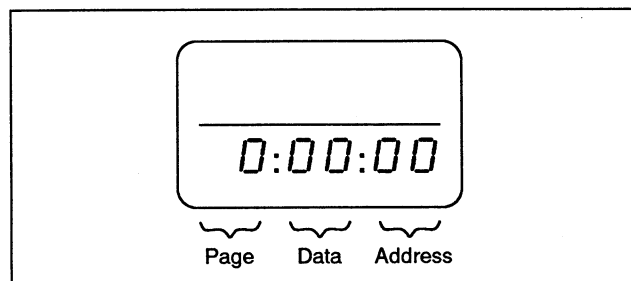


Fig. 7-1-6.

- 3) Operate the adjusting remote commander as follows.

- Changing the page

The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH- button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
LCD Display	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal notation conversion value	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 7-1-1.

- Changing the address

The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.

- Changing the data (Data setting)

The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed.

There are altogether 256 data, from 00 to FF.

- Writing the adjustment data

The PAUSE button must be pressed to write the adjustment data (F page) in the nonvolatile memory.

(The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)

- 4) Select page: 6, address: 00, and adjust the data to 01. Page F, and enables the camera section (Addresses 01 to BF of page F) to be adjusted.
- 5) After completing all adjustments, turn off the main power supply (6.3V) once.

##### 2. Precautions upon using the adjusting remote commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

#### 1-1-4. Adjusting Stereo Commander

The stereo system is adjusted by changing the content or coefficient of the digital signal processing calculation, or modifying the output range of the DVB, IC/VC board (ICB2). This is controlled by the stereo voice processor (VC board (VBC2), which sends the data written in the nonvolatile memory (VC board (VBC2) EEPROM), and transmits it to the digital signal processing circuit and DVB.

In the picture adjustment, adjustment data written in the nonvolatile memory send to reception, using the adjusting stereo commander.

The adjusting stereo commander uses the stereo commander signal line (LASC) to communicate initially with the stereo subprocessor. The page, address and the options commands of the data are transmitted from the adjusting stereo commander to the stereo voice processor. And, the page, address, and data are transmitted from the stereo voice.

##### 1. Entering the adjusting stereo commander

1) Connect the adjusting stereo commander to the stereo terminal.

2) Adjust the ICB2 output of the adjusting stereo commander to "HOLD" (STOP/VCB position).

If it has been properly connected, the LCD in the adjusting stereo commander will display as shown in Fig. 7-1-4.



Fig. 7-1-4.

##### 2) Operation for adjusting stereo commander is follows.

###### 1. Changing the page

The page increases when the NEXT SEARCH+ button is pressed, and decreases when the NEXT SEARCH- button is pressed. There are altogether 30 pages, from 0 to F.

Hexadecimal number	0 1 2 3 4 5 6 7 8 9 A B C D E F
LED display	0 1 2 3 4 5 6 7 8 9 A b c d e f
Decimal number (conversion value)	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Table 7-1-1.

###### 2. Changing the address

The address increases when the PP (+) button is pressed, and decreases when the STOP (-44) button is pressed. There are altogether 256 addresses, from 00 to FF.

###### 3. Changing the data (Data setting)

The data increases when the PLAY (+) button is pressed, and decreases when the STOP (-44) button is pressed.

There are altogether 256 data, from 00 to FF.

###### 4. Writing the adjustment data

The WRITE button must be pressed to write the adjustment data (F page) in the nonvolatile memory.

(The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)

4) Select page F, address 00, and adjust the data to 00. (Page F) and enables the stereo picture (Address 00 is 10F of page F) to be adjusted.

5) After completing all adjustments, turn off the main power supply (L-PS) once.

##### 3. Precautions upon using the adjusting stereo commander

Initializing of the adjusting stereo commander may erase the current adjustment data at times. To prevent this, it is recommended that all adjustment data be saved before before beginning adjustments and save adjustment data after each adjustment.



### 1-1-5. Page F Address List

**Note 1:** The data already listed in the adjustment data memo column are fixed values.

**Note 2:** The adjustment data initial values are values just after executing "Page F Data Initialization" and "Page F Data Modification". They are different from the values after executing all adjustments.

**Note 3:** In some cases, data have been input to the page F addresses C0 to FF. This has no relation to the adjustments.

**Note 4:** No mark : CCD-TR42/TR72/TR80/TR430

( ) : CCD-TR82/TR550

< > : CCD-TR70

《 》 : CCD-TR400/TR750

Address	Adjustment data	
	Initial value	Memo column
00	5C (5A) <5E> 《56》	5C (5A) <5E> 《56》
01	0A (00)	0A (00)
02	00	00
03	00 (07)	00 (07)
04	80	
05	80	
06	80	
07	80	
08	2D	
09	26	
0A	FA	
0B	F1	
0C	30	
0D	00	
0E	58	
0F	00	
10	E0	E0
11	8F	
12	6C	
13	36	
14	3C	
15	B6	
16	0D	
17	A3	
18	12	
19	8E	
1A	10	
1B	E2	
1C	0C	0C
1D	00	00
1E	80	
1F	80	
20	80 (79)	80 (79)
21	80 (79)	80 (79)
22	00	00
23	59	53
24	43	43
25	A5 (B5)	A5 (B5)
26	23	23
27	3A	3A
28	A2	A2
29	0B	0B

Table 7-1-2 (1).

# **1-4-B Page F Address List**

**Note 1:** The data already listed in the adjustment data column address are final values.

**Note 2:** The adjustment data (initial values are values just after executing "Page F Data Initialization" and "Page F Data Modification". They are different from the values after executing all adjustments.

**Note 3:** In some cases, data have been input in the page F addresses C2 to F0. This has no relation to the adjustments.

**Note 4:** No such : C20 (B4) T000 T040 T040

{ : C20 (B4) T000  
 : C20 (B4)  
 : C20 (B4) T040 T040

Address	Adjustment data	
	Initial value	Memory address
00	00 (1A) 000 000	0C (1A) 000 000
01	0A (00)	0A (00)
02	00	00
03	00 (00)	00 (00)
04	00	
05	00	
06	00	
07	00	
08	00	
09	00	
0A	00	
0B	00	
0C	00	
0D	00	
0E	00	
0F	00	
10	00	00
11	00	
12	00	
13	00	
14	00	
15	00	
16	00	
17	A0	
18	10	
19	00	
1A	10	
1B	00	
1C	00	00
1D	00	00
1E	00	
1F	00	
20	00 (7F)	00 (7F)
21	00 (7F)	00 (7F)
22	00	00
23	00	00
24	00	00
25	A0 (00)	A0 (00)
26	00	00
27	00	00
28	A0	A0
29	00	00

**Table 1-4-B (3)**

Address	Adjustment data	
	Initial value	Memo column
2A	0C (2C)	0C (2C)
2B	58 (50)	58 (50)
2C	FF	FF
2D	06 ((04))	06 ((04))
2E	17 (16)	17 (16)
2F	22 (27) 《29》	22 (27) 《29》
30	08	08
31	00	00
32	50 (47) 《48》	50 (47) 《48》
33	68	68
34	00 (02)	00 (02)
35	30 (50)	30 (50)
36	02	02
37	00	00
38	76	76
39	6A	6A
3A	80	80
3B	20	20
3C	F0	F0
3D	03 (02)	03 (02)
3E	00	
3F	00	
40	00	
41	00	
42	00	
43	00	
44	00	
45	00	00
46	00	
47	00	
48	00	
49	00	
4A	00	
4B	00	
4C	00	
4D	00	
4E	00	00
4F	20	20
50	05 (32)	05 (32)
51	02	02
52	66	66
53	18	18

Table 7-1-2 (2).

Address	Adjustment data	
	Initial value	Memo column
54	66 (6B)	66 (6B)
55	9F	9F
56	66	66
57	66 (6C)	66 (6C)
58	59 (5C)	59 (5C)
59	83	83
5A	67	67
5B	5C	5C
5C	5C	5C
5D	4A	4A
5E	1E (20)	1E (20)
5F	5C	5C
60	3A (3C)	3A (3C)
61	33	33
62	0C	0C
63	26	26
64	04	04
65	02	02
66	00	00
67	00	00
68	00	00
69	00	00
6A	00	00
6B	00	00
6C	00	00
6D	00	00
6E	00	00
6F	34	34
70	10	10
71	26	26
72	0F	0F
73	0F	0F
74	00	00
75	23	23
76	1B	1B
77	E0	E0
78	A0	A0
79	30	30
7A	10	10
7B	50	50
7C	58	58
7D	88	88

Table 7-1-2 (3).

Address	Adjustment data	
	Initial value	Memory column
1A	00 (00)	00 (00)
1B	00 (00)	00 (00)
1C	00	00
1D	00 (00)	00 (00)
20	11 (00)	11 (00)
2F	22 (17) 000	22 (17) 000
30	00	00
31	00	00
33	50 (17) 000	50 (17) 000
35	00	00
3A	00 (00)	00 (00)
3B	00 (00)	00 (00)
3C	00	00
3D	00	00
3E	00	00
3F	70	70
3A	0A	0A
3A	00	00
3B	00	00
3C	70	70
3D	00 (00)	00 (00)
3E	00	
3F	00	
40	00	
41	00	
42	00	
43	00	
44	00	
45	00	
46	00	
47	00	
48	00	
49	00	
4A	00	
4B	00	
4C	00	
4D	00	
4E	00	
4F	00	
50	70 (70)	00 (00)
51	00	00
52	00	00
53	00	00

Table 7-1-4 (2)

Address	Adjustment data	
	Initial value	Memory column
54	00 (00)	00 (00)
55	00	00
56	00	00
57	00 (00)	00 (00)
58	00 (00)	00 (00)
59	00	00
5A	00	00
5B	00	00
5C	00	00
5D	00	00
5E	00 (00)	00 (00)
5F	00	00
60	0A (00)	0A (00)
61	00	00
62	00	00
63	00	00
64	00	00
65	00	00
66	00	00
67	00	00
68	00	00
69	00	00
6A	00	00
6B	00	00
6C	00	00
6D	00	00
6E	00	00
6F	00	00
70	10	10
71	00	00
72	00	00
73	00	00
74	00	00
75	00	00
76	10	10
77	00	00
78	00	00
79	00	00
7A	00	00
7B	00	00
7C	00	00
7D	00	00

Table 7-1-4 (3)

Address	Adjustment data	
	Initial value	Memo column
7E	66	66
7F	46	46
80	8F	8F
81	13	13
82	30	30
83	60	60
84	70	70
85	80	80
86	A0	A0
87	C0	C0
88	70	70
89	78	78
8A	80	80
8B	90	90
8C	A0	A0
8D	40	40
8E	FF	FF
8F	00	00
90	00 <11>	00 <11>
91	77	77
92	00	00
93	FB	FB
94	02	02
95	32	32
96	6B	6B
97	8D	8D
98	A1	A1
99	30	30
9A	30	30
9B	21	21
9C	72	72
9D	00	00
9E	00	00
9F	00	00
A0	00	00
A1	00	00
A2	00	00
A3	02	02
A4	80	80
A5	00	00
A6	80	80
A7	00	00

Table 7-1-2 (4).

Address	Adjustment data	
	Initial value	Memo column
A8	00	00
A9	80	80
AA	00	00
AB	00	00
AC	02	02
AD	44	44
AE	3D	3D
AF	1B (25)	1B (25)
B0	3D	3D
B1	1B (25)	1B (25)
B2	A4 (A2)	A4 (A2)
B3	4B	4B
B4	00	00
B5	20	20
B6	00	00
B7	05	05
B8	00	00
B9	20	20
BA	00	00
BB	70 (6E)	70 (6E)
BC	35 (32)	35 (32)
BD	54	54
BE		
BF		
C0 to EF		
F0		
F1		
F2		
F3		
F4		
F5		
F6		
F7		
F8		
F9		
FA		
FB		
FC		
FD		
FE		
FF		

Table 7-1-2 (5).

Address	Adjustment data	
	Initial value	Masked values
7E	00	00
7F	40	40
80	80	80
81	15	15
82	30	30
83	60	60
84	90	90
85	80	80
86	A0	A0
87	C0	C0
88	70	70
89	70	70
8A	40	40
8B	50	50
8C	A0	A0
8D	60	60
8E	FF	FF
8F	00	00
90	00 (11)	00 (11)
91	70	70
92	00	00
93	70	70
94	00	00
95	30	30
96	60	60
97	80	80
98	A0	A0
99	50	50
9A	50	50
9B	20	20
9C	70	70
9D	00	00
9E	00	00
9F	00	00
AB	00	00
AC	00	00
AD	00	00
AE	00	00
AF	00	00
AD	00	00

Table 7-1-2 (5)

Address	Adjustment data	
	Initial value	Masked values
AB	00	00
AC	00	00
AD	00	00
AE	00	00
AF	AA	AA
BB	00	00
BC	00 (2F)	00 (2F)
BD	00	00
BE	00 (2F)	00 (2F)
BF	AA (A0)	AA (A0)
C0	40	40
C4	00	00
C5	00	00
C6	00	00
C7	00	00
C8	00	00
C9	00	00
CA	00	00
CB	70 (60)	70 (60)
CC	70 (70)	70 (70)
CD	AA	AA
CE		
CF		
D0 to EF		
F0		
F1		
F2		
F3		
F4		
F5		
F6		
F7		
F8		
F9		
FA		
FB		
FC		
FD		
FE		
FF		

Table 7-1-2 (6)

### 1-1-6. Data Processing

The calculation of the DDS display and the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 7-1-3. indicates the hexadecimal notation-the decimal notation calculation table.

Hexadecimal notation-Decimal notation

The lower digits of the hexadecimal notation The upper digits of the hexadecimal notation																
	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

**Note:** ( ) indicate the adjusting remote control unit display.

**(Example)** In the case that the DDS display and the adjusting remote control unit display are BD (b d).

As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection "189" of the ① and ② in the above table is the decimal notation to be calculated.

Table 7-1-3.

#### 7-1-4. Data Processing

The calculation of the LOG display and the adjusting means command display data (hexadecimal notation) are required for obtaining the adjustment data of zero adjustment limit. In this case, after converting the hexadecimal notation to decimal notation, calculation and convert the result to hexadecimal notation, and use it as the adjustment data. Table 7-1-2, indicates the hexadecimal notation-the decimal notation calculation table.

Hexadecimal notation-Decimal notation

<div> <div>The lower digits of the hexadecimal notation</div> <div>The upper digits of the hexadecimal notation</div> </div>	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (16)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B (16)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (16)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (16)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (16)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (16)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Notes: ( ) indicates the adjusting means command code display.

(Example) In the case that the LOG display and the adjusting means command display are both 16 (16).

As the upper digit of the hexadecimal notation is 16 (16), and the lower digit is 16 (16), hexadecimal "10" of the 0 and 16 is the above value in the decimal notation (in hexadecimal).

Table 7-1-2.



## Using the PROGRAM AE Function

You can select from four PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action or night views.

### Selecting the Best Mode

Select the best mode by using the following examples.



#### Portrait mode

- A still subject such as a person or flower
- Subject behind an obstacle such as a net
- Zooming in on a subject in telephoto

#### Sports mode

- Outdoor sports scenes such as football, tennis, golf or skiing
- A landscape in a moving car

#### High-speed shutter mode

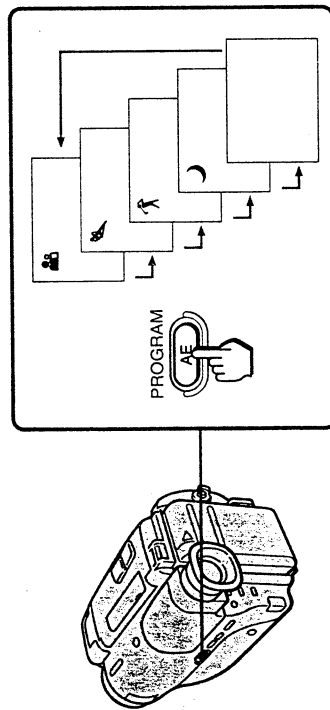
- A golf swing or a tennis match in fine weather with the ball captured clearly
- Playing back certain scenes with high-speed movements in clear, sharp picture

#### Twilight mode

- Recording night views neon signs or fireworks

### Using the PROGRAM AE Function

Press PROGRAM AE repeatedly so that the desired mode indicator appears inside the viewfinder.



#### Note on shutter speed

The shutter speed in each PROGRAM AE mode is as follows:

Portrait mode – between 1/60 to 1/2000

Sports mode – between 1/60 to 1/500

High-speed shutter mode – 1/4000

Twilight mode – 1/60

Normal mode – 1/60

## Fade-in and Fade-out

You can fade in or fade out to give your recording a professional appearance. When fading in, the picture will gradually appear from black or mosaic. The sound will also gradually increase. When fading out, the picture will gradually fade to black or mosaic. The sound will also decrease.

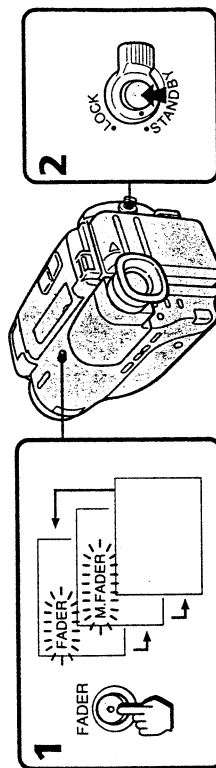
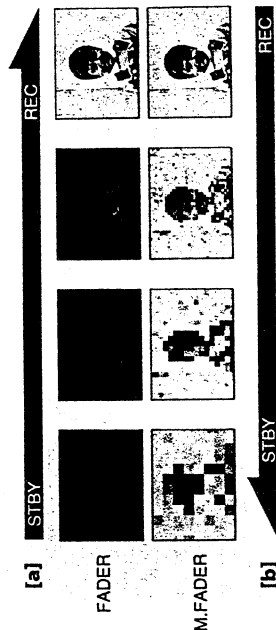
### When Fading in [a]

(1) During the camcorder is in Standby mode, press FADER. The fade indicator starts flashing.

(2) Press START/STOP to start recording. The fade indicator stops flashing.

### When Fading out [b]

(1) During recording, press FADER. The fade indicator starts flashing. (2) Press START/STOP to stop recording. The fade indicator stops flashing and recording stops.



**To Cancel the Fade-in/out Function**  
Before pressing START/STOP, press FADER once or twice until the fade indicator disappears.

**When the date/time indicator is displayed**  
The date/time does not fade in nor fade out.

## Using the PROGRAM as Function

The model being shown is the PROGRAM as a function. The model is shown in the PROGRAM as a function. The model is shown in the PROGRAM as a function.

(Continued from Page 10)

From the first model, the first model is shown.



1. The first model is shown in the first model.
2. The first model is shown in the first model.
3. The first model is shown in the first model.
4. The first model is shown in the first model.

The first model is shown in the first model. The first model is shown in the first model. The first model is shown in the first model.



The first model is shown in the first model. The first model is shown in the first model. The first model is shown in the first model.

## Using the PROGRAM as Function

The model being shown is the PROGRAM as a function. The model is shown in the PROGRAM as a function. The model is shown in the PROGRAM as a function.

(Continued from Page 10)


From the first model, the first model is shown.



The first model is shown in the first model. The first model is shown in the first model. The first model is shown in the first model.

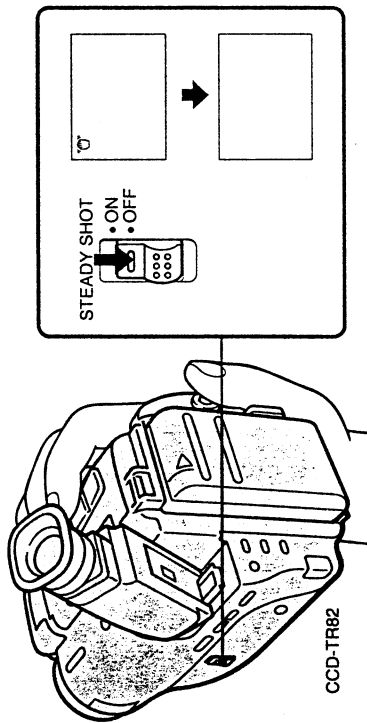
## Releasing the Steady Shot Function

### — For the model with the STEADY SHOT switch (CCD-TR82 only)

When you shoot, the  indicator appears in the viewfinder. This indicates that the Steady Shot function is working and the camcorder compensates for camera-shake.

You can release the Steady Shot function. Do not use the Steady Shot function such as when shooting stationary object with a tripod.

Set STEADY SHOT to OFF.







### To Activate the Steady Shot Function Again

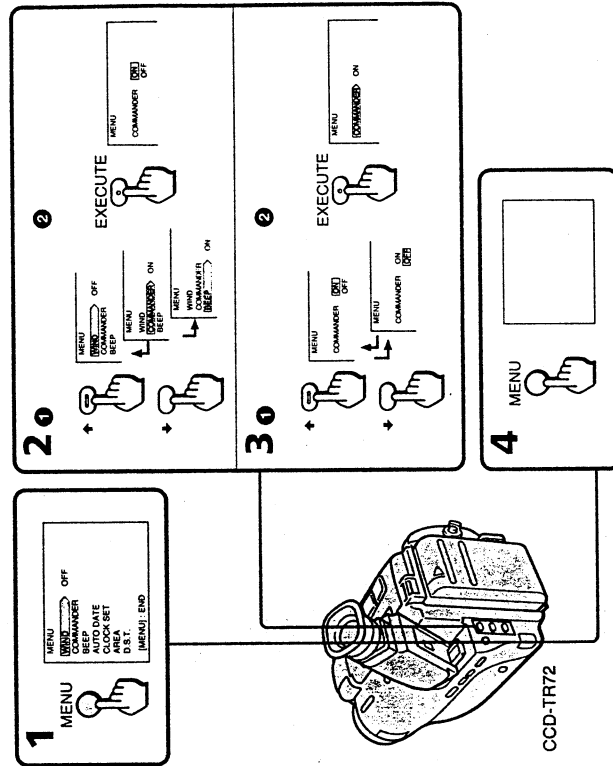
Set STEADY SHOT to ON.

#### Notes on the Steady Shot Function

- The Steady Shot function will not correct excessive camera-shake.
- When you switch the STEADY SHOT, the exposure may vary.

## Changing the Mode Settings

You can change the mode settings in the menu system to further enjoy the features and functions.  
**(1)** Press MENU to display the menu in the viewfinder. **(2)** Press  or  to select the desired item, then press EXECUTE. **(3)** Press  or  to set the desired mode, then press EXECUTE. If you want to change the other modes, repeat steps 2 and 3. **(4)** Press MENU to erase the menu display.



#### Note on BACK UP

When BACK UP indicator appears on the menu display, the settings of items are retained even when the battery is removed, as long as the lithium battery is in place.

### Selecting the Mode Setting of Each Item

#### Common Items in CAMERA and PLAYER Modes

- COMMANDER <ON/OFF>
- Select ON when using the supplied Remote Commander for the camcorder.
- Select OFF when not using the Remote Commander for the camcorder.

#### BEEP <ON/OFF>

- Select ON so that beeps sound when you start/stop recording.
- Select OFF when you do not want to hear the beep sound.

## Releasing the Slowly Shot Function

→ For the release, press the **START** button (with the **STOP** symbol) when the shot starts (when the target is in position). The release of the slowly shot function is working and the electronic target system is activated.

The next step is to load the electronic target on the target that enables and enables during automatic data collection.

**CONTINUE WITH 1.10**



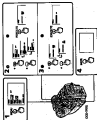
To activate the slowly shot function, press

**START/STOP (STOP) = ON**

→ Press the **START/STOP** button when the target is in position and the target is activated.

## Operating the Mode Settings

→ Press the **MODE** button to enter the mode settings. The mode settings are shown on the display. Press the **MODE** button to enter the mode settings. The mode settings are shown on the display. Press the **MODE** button to enter the mode settings. The mode settings are shown on the display.



**MODE = ON**

→ Press the **MODE** button to enter the mode settings. The mode settings are shown on the display. Press the **MODE** button to enter the mode settings. The mode settings are shown on the display.

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## Changing the Mode Settings

### Items in CAMERA mode

#### WIND <ON/OFF>

- For stereo models (CCD-TR72/TR80)
- Select ON to reduce wind noise when recording in strong wind.
- Normally select OFF.

#### AUTO DATE <ON/OFF>

- Select ON to record the date of recording automatically (AUTO DATE feature: p.12).
- Select OFF otherwise.

#### CLOCK SET

Select this item when you need to reset the clock (p.31).

#### AREA

Select the area number of the time zone where you will use the camcorder when you use the world clock (p.27).

#### D.S.T. <ON/OFF>

- Select ON to set the clock to Daylight Saving Time.
- Select OFF to set to standard time.

### Items in PLAYER mode

#### EDIT <ON/OFF>

- Select ON to minimize the picture deterioration when editing.
- Normally select OFF.

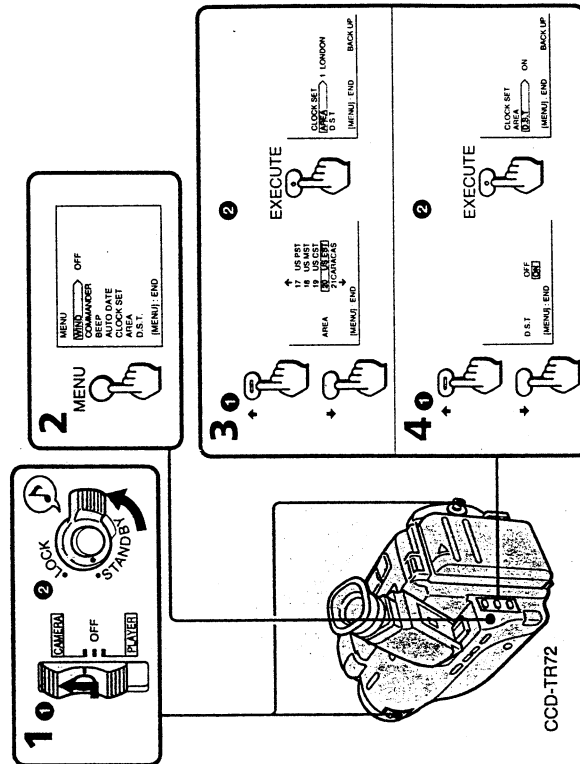
#### HIFI SOUND <STEREO/1/2>

- For stereo models (CCD-TR72/TR80)
- Normally select STEREO.
- Select 1 or 2 to play back a dual soundtrack tape.

## Using the World Clock

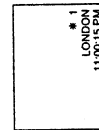
Reset the clock according to the local time zone by setting AREA and D.S.T. modes in the menu system. First find the area number in the "Time zone chart" on page 28.

- (1) Turn STANDBY up. (2) Press MENU to display the menu. (3) Select AREA item (p.26). Press  $\uparrow$  or  $\downarrow$  to select the area number where you will use the camcorder. Press EXECUTE. (4) Select D.S.T. item (p.26). Press  $\uparrow$  or  $\downarrow$  to select ON for Daylight Saving Time or OFF for standard time. Press EXECUTE.



Changing the Mode Settings

The area name appears in the viewfinder when using the world clock. The  $\star$  indicator appears in the viewfinder when setting to Daylight Saving Time.



### To Check the Date

Press DATE. To turn off the date indicator, press DATE again.

### To restore to Your Home Area Time

Reset the AREA mode in the menu system to your home area number.

See the next page for the Time Zone Chart. 27

## Overview of the Blackboard System

### Overview of the Blackboard System

The Blackboard System is a knowledge-based system that provides a framework for the development of intelligent systems. It is designed to be a flexible and extensible environment for the development of intelligent systems. The system is based on the concept of a blackboard, which is a shared memory structure that stores information about the current state of the system. The system is designed to be a flexible and extensible environment for the development of intelligent systems.

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### Overview of the Blackboard System

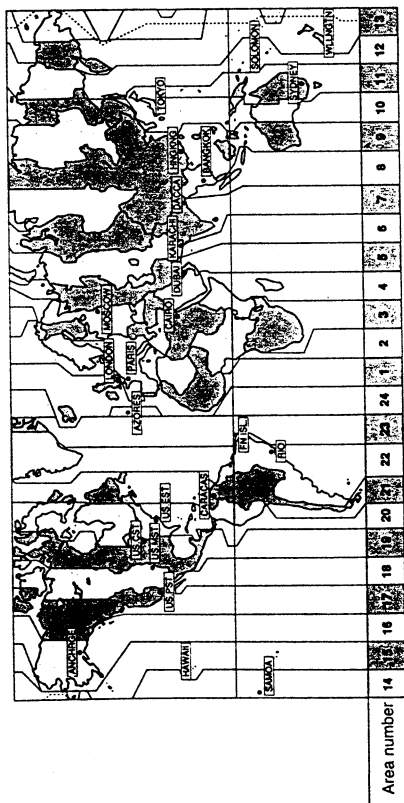
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## Changing the Mode Settings

Time Zone Chart



Area number	Area name	Nations or area*
1	LONDON	England, GMT (Greenwich Mean Time), Morocco, Portugal
2	PARIS	Austria, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, CET
3	CAIRO	Egypt, Finland, Greece, Israel, Turkey
4	MOSCOW	Ethiopia, Iraq, Kenya, Saudi Arabia, former U.S.S.R. (west)
5	DUBAI	United Arab Emirates
6	KARACHI	Maldives, Pakistan
7	DACCA	Bangladesh, Myanmar
8	BANGKOK	Cambodia, Indonesia (Jakarta), Thailand, Vietnam
9	HONGKONG	Australia (west), China, Hong Kong, Indonesia (Bali, Borneo), Malaysia, Philippines, Singapore, Taiwan
10	TOKYO	Japan, Korea
11	SYDNEY	Australia (east), Guam, Saipan
12	SOLOMON	New Caledonia
13	WLLNGTN	Fiji, New Zealand
14	SAMOA	Western Samoa
15	HAWAII	HST (Hawaii Standard Time), Tahiti
16	ANCHORAGE	AST (Alaska Standard Time)
17	US, PST	PST (Pacific Standard Time)
18	US, MST	MST (Mountain Standard Time)
19	US, CST	CST (Central Standard Time), Mexico
20	US, EST	EST (East Standard Time), Peru
21	CARACAS	Chili, Dominica, Venezuela
22	RIO	Argentina, Brazil, Uruguay
23	FN ISL.	Fernando de Noronha
24	AZORES	Azores Islands

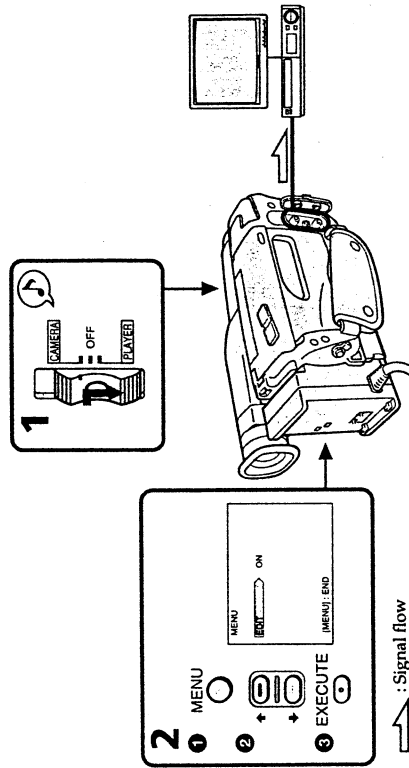
\* These are common names. They may be different from formal country names.

## Editing onto Another Tape

You can create your own video program by editing with any other 8 mm, Hi8, Hi8 VHS, S-VHS, VHS, Hi8 VHS, S-VHS, or Hi8 VHS VCR that has video/audio inputs.

### Before Editing

After connecting the camcorder to the VCR, (1) Slide the POWER switch to PLAYER. (2) Set EDIT mode to ON in the menu system to minimise the picture deterioration (p.25).



### Starting Editing

(1) Insert a blank tape (or a tape you want to record over) into the recording VCR. Then insert your recorded tape into the camcorder. (2) Play back the recorded tape on the camcorder until you locate the point where you want to start editing. Then set the camcorder to playback pause mode. (3) Set the recording VCR to recording pause mode. (4) Press II on the camcorder and VCR simultaneously to start editing.

### To Edit More Scenes

Repeat steps 2 to 4.

### To Stop Editing

Press □ STOP on the camcorder and VCR. When you finish editing, reset EDIT mode to OFF (p.25).

### Use of the EDITSEARCH button

To play back a tape in the forward or reverse direction keep pressing EDITSEARCH during playback pause. You can play back still pictures successively at specific intervals by pressing EDITSEARCH intermittently.

### Note on DISPLAY function

If you have displayed the viewfinder screen indicators on the TV (DISPLAY function), erase the indicators by pressing DISPLAY on the Remote Commander so that they will not be superimposed on the edited tape.

Changing the Mode Settings/Editing onto Another Tape



Table 1		Table 2	
Year	Population	Year	Population
1990	100,000	1990	100,000
1991	101,000	1991	101,000
1992	102,000	1992	102,000
1993	103,000	1993	103,000
1994	104,000	1994	104,000
1995	105,000	1995	105,000
1996	106,000	1996	106,000
1997	107,000	1997	107,000
1998	108,000	1998	108,000
1999	109,000	1999	109,000
2000	110,000	2000	110,000
2001	111,000	2001	111,000
2002	112,000	2002	112,000
2003	113,000	2003	113,000
2004	114,000	2004	114,000
2005	115,000	2005	115,000
2006	116,000	2006	116,000
2007	117,000	2007	117,000
2008	118,000	2008	118,000
2009	119,000	2009	119,000
2010	120,000	2010	120,000

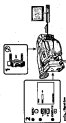
Source: U.S. Census Bureau, 2000. All figures are in thousands.

## Editing and Reformatting

The next step in editing is adding and deleting text. The text in the table above is as follows:

Table 1: Population of the United States, 1990-2010

Year Population  
1990 100,000  
1991 101,000  
1992 102,000  
1993 103,000  
1994 104,000  
1995 105,000  
1996 106,000  
1997 107,000  
1998 108,000  
1999 109,000  
2000 110,000  
2001 111,000  
2002 112,000  
2003 113,000  
2004 114,000  
2005 115,000  
2006 116,000  
2007 117,000  
2008 118,000  
2009 119,000  
2010 120,000



The next step in editing is adding and deleting text. The text in the table above is as follows:

Table 1: Population of the United States, 1990-2010

Year Population  
1990 100,000  
1991 101,000  
1992 102,000  
1993 103,000  
1994 104,000  
1995 105,000  
1996 106,000  
1997 107,000  
1998 108,000  
1999 109,000  
2000 110,000  
2001 111,000  
2002 112,000  
2003 113,000  
2004 114,000  
2005 115,000  
2006 116,000  
2007 117,000  
2008 118,000  
2009 119,000  
2010 120,000

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Table 1: Population of the United States, 1990-2010

Year Population  
1990 100,000  
1991 101,000  
1992 102,000  
1993 103,000  
1994 104,000  
1995 105,000  
1996 106,000  
1997 107,000  
1998 108,000  
1999 109,000  
2000 110,000  
2001 111,000  
2002 112,000  
2003 113,000  
2004 114,000  
2005 115,000  
2006 116,000  
2007 117,000  
2008 118,000  
2009 119,000  
2010 120,000

The next step in editing is adding and deleting text. The text in the table above is as follows:

Table 1: Population of the United States, 1990-2010

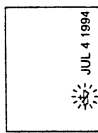
Year Population  
1990 100,000  
1991 101,000  
1992 102,000  
1993 103,000  
1994 104,000  
1995 105,000  
1996 106,000  
1997 107,000  
1998 108,000  
1999 109,000  
2000 110,000  
2001 111,000  
2002 112,000  
2003 113,000  
2004 114,000  
2005 115,000  
2006 116,000  
2007 117,000  
2008 118,000  
2009 119,000  
2010 120,000



## Additional Information

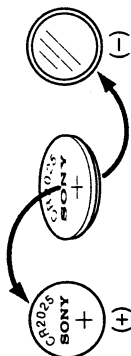
### Changing the Lithium Battery In the Camcorder

Your camcorder is supplied with the lithium battery installed. The lithium battery lasts for about 1 year under normal operation. When the battery becomes weak or dead, the indicator flashes in the viewfinder for about 5 seconds when you set the POWER switch to CAM/ERA. In this case, **replace the battery with the Sony CR2025 or Duracell DL-2025 lithium battery. Use of another battery may present a risk of fire or explosion.**



#### Note on Lithium Battery

Note that the lithium battery has a positive (+) and a negative (-) terminals as illustrated. **Be sure to install the lithium battery so that terminals on the battery match the terminals on the camcorder.**



#### WARNING

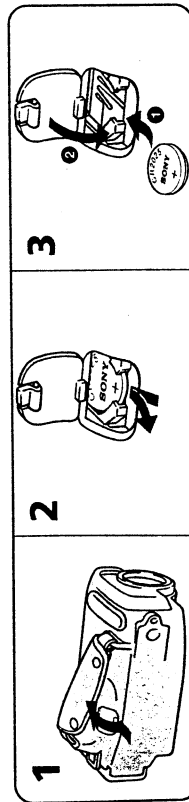
The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

#### Caution

Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.

### Changing the Lithium Battery

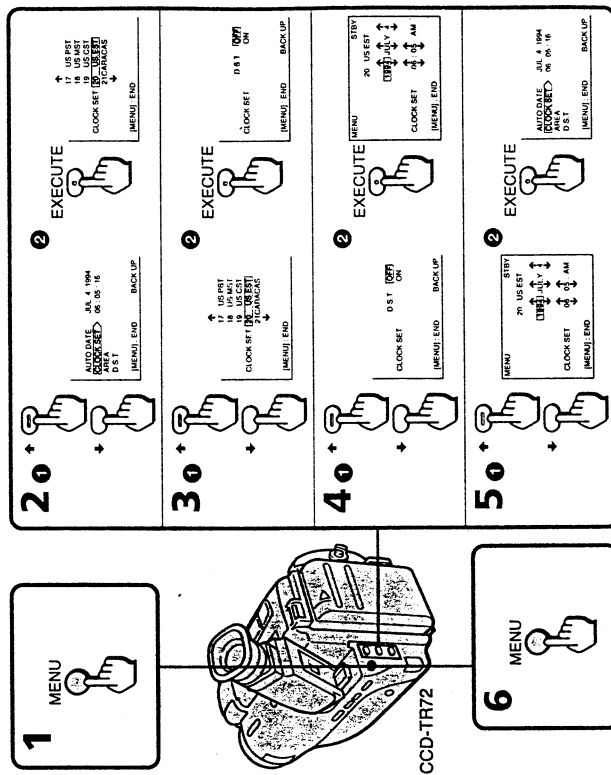
When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time and the other items with BACK UP indicator in the menu system. (1) Open the lid of the lithium battery compartment. (2) Push the battery down once and pull it out from the holder. (3) Install the lithium battery with the positive (+) side facing out. Close the lid of the battery compartment.



## Resetting the Date and Time

Reset the date and time in the menu system.

(1) Press MENU to display the menu. (2) Press  $\uparrow$  or  $\downarrow$  to select CLOCK SET item (p.26). Press EXECUTE. (3) Press  $\uparrow$  or  $\downarrow$  to select the area number where you will use the camcorder. Press EXECUTE. (4) Select D.S.T. ON for Daylight Saving Time or OFF for standard time. Press EXECUTE. (5) Set year, month, day, time, minute by pressing  $\uparrow$ ,  $\downarrow$  and EXECUTE. Note that when you keep  $\uparrow$  and  $\downarrow$  pressed, the digits advance faster. (6) Press MENU to erase the menu display.



#### Time Zones and Area Numbers and Names

"S.T." in the following table stands for Standard Time.

Time Zones	Area Name	Area Number
Hawaii S.T.	HAWAII	15
Alaska S.T.	ANCHORAGE	16
Pacific S.T./West Canada	US/PST	17
Mountain S.T.	US/MST	18
Central S.T.	US/CST	19
Eastern S.T./East Canada	US/EST	20

### Labware: Equipment

## Disposing the Lithium Battery in the Camcorder

The procedure to remove the lithium battery is as follows. The first thing you should do is turn the camcorder off. Then, you should remove the battery cover. To do this, you should press the battery cover release button. The battery cover will then pop out. You should then remove the battery from the camcorder. The battery should be disposed of properly.



### How to Dispose of the Battery

There are two ways to dispose of a lithium battery. The first way is to take it to a recycling center. The second way is to take it to a hazardous waste disposal site. The battery should be disposed of properly.



### Disposing the Lithium Battery

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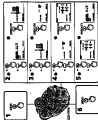
### Disposing the Lithium Battery

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## Resetting the Date and Time

The date and time is stored in the camcorder's memory. To reset the date and time, you should press the date and time button. The date and time will then be reset to the current date and time.



### Resetting the Date and Time

Step	Action	Result
1	Press the date and time button	The date and time will be reset to the current date and time.
2	Press the date button	The date will be reset to the current date.
3	Press the time button	The time will be reset to the current time.
4	Press the OK button	The date and time will be reset to the current date and time.

## Resetting the Date and Time

### To Correct the Date and Time Setting

Repeat steps 2 to 5.

### To Check the Date and Time

Press DATE to display the date indicator in the viewfinder. Press TIME to display the time indicator. When you press the same button again, the indicator goes out.

### To Reset to Standard Time

Change D.S.T. mode setting in the menu system (p.25).

### The year indicator changes as follows:

1994 ↔ 1995 ↔ 2024

### Note on the time indicator

The internal clock of the camcorder operates on a 12-hour cycle. 12:00:00 AM stands for midnight. 12:00:00 PM stands for noon.

## Playback Modes

The playback mode is selected automatically according to the recording system (SP/LP mode) in which the tape was recorded.

### Notes on AFM Hi-Fi stereo — For stereo models (CCD-TR72/TR80)

When you play back the tape, the sound is in monaural if:

- You record the tape using this camcorder, then play it back on an AFM Hi-Fi monaural video recorder/player.
- You record the tape on an AFM Hi-Fi monaural video recorder, then play it back on this camcorder.

### LP (long play) mode

When you play back a tape recorded in LP mode, the LP indicator lights up in the viewfinder. This camcorder cannot record tape in LP mode.

### Foreign 8 mm video

You cannot play software recorded on a different TV color system. Because the TV color systems differ from country to country, you may not be able to play back foreign pre-recorded software. Refer to page 39 to check the TV color system of foreign countries.

## Tips for Using the Battery Pack

This section shows you how you can get the most out of your battery pack.

### Preparing the Battery Pack

#### Always Carry Additional Batteries

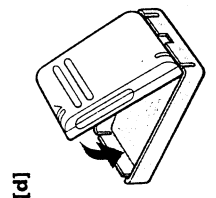
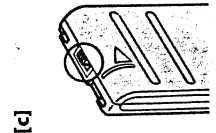
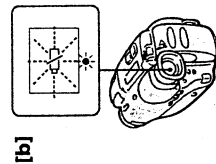
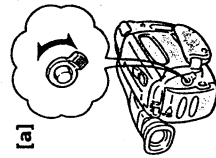
Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

#### Battery Life is Shorter in Cold Environment

Battery efficiency is decreased and the battery will be used up more quickly if you are recording in cold environment.

#### To Save Battery Power

Turn the STANDBY switch on the camcorder down when not recording to save battery power. [a] A smooth transition between scenes can be made even if recording is stopped and started again. While positioning the subject, selecting an angle, or looking through the viewfinder lens, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.



### Recharging the Radio and Trans

To Charge the Radio and Transmitter  
 always together.

To Charge the Radio and Transmitter:  
 1. Plug the radio and transmitter into the Radio and Transmitter Charger. The Radio and Transmitter Charger will charge the radio and transmitter together.

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5. The Radio and Transmitter Charger will charge the radio and transmitter together.

### Recharge the Radio

To Charge the Radio:  
 1. Plug the radio into the Radio Charger.

2. The Radio Charger will charge the radio.

3. The Radio Charger will charge the radio.

4. The Radio Charger will charge the radio.

5. The Radio Charger will charge the radio.

6. The Radio Charger will charge the radio.

7. The Radio Charger will charge the radio.

8. The Radio Charger will charge the radio.

9. The Radio Charger will charge the radio.

10. The Radio Charger will charge the radio.

11. The Radio Charger will charge the radio.

12. The Radio Charger will charge the radio.

### Turn Your Radio On the Battery Pack

To Turn Your Radio On the Battery Pack:

1. Plug the radio into the Battery Pack.

2. The Battery Pack will charge the radio.

3. The Battery Pack will charge the radio.

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11. The Battery Pack will charge the radio.

12. The Battery Pack will charge the radio.



## Tips for Using the Battery Pack

### When to Replace the Battery Pack

While you are using your camcorder, the remaining battery indicator decreases gradually as battery power is used up.



When the remaining battery indicator reaches the lowest point, the **i** indicator appears and starts flashing in the viewfinder. [b] on page 33.

When the **CL** indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, slide the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain smooth transition between scenes after the battery pack is replaced.

#### Note on the remaining battery indicator

The remaining battery indicator of the camcorder may indicate a different remaining capacity from that of the battery pack with the remaining battery indicator (not supplied). The indicator of the battery pack is more accurate.

### Notes on the Rechargeable Battery Pack

#### The Battery Heats Up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern.

#### Battery Care

- Remove the battery pack from the camcorder after using the battery pack, and keep it in a cool place. When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF, which shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery right before using the camcorder.

#### How to Use the Switch on the Battery Pack

This switch is provided so that you can mark the charged battery. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up (or in whichever direction you want to remind yourself). [c] on page 33.

#### The Life of the Battery Pack

The battery pack can be fully charged and discharged about 500 times under normal temperatures. If the **CL** indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

#### Charging Temperature

You should charge batteries at temperatures from 50°F to 86°F (from 10°C to 30°C). Lower temperatures require a longer charging time.

### Notes on Charging

#### A Brand-new Battery

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

#### Before Recharging a Used Battery Pack

- Make sure to use up the battery before recharging.
- If recording is completed before the **CL** indicator appears in the viewfinder, you should remove the tape, slide the POWER switch to CAMERA, turn STANDBY up, and leave the camcorder until the battery indicator flashes rapidly.
- When you use the AC-S10 power adaptor, you can use the discharging function.
- **Charging the usable battery causes a lowering of battery capacity. Battery capacity can be recovered if you fully discharge and charge the battery again.**

#### After Long Storage

Recharge the battery pack after a long period of storage. If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged. Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

### Notes on the Terminals

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened. When the terminals are not clean or when the battery pack has not been used for a long time, repeat installing and removing the battery pack. This improves the contact condition. Also, wipe the + and - terminals with a soft cloth or paper.

#### Be Sure to Observe the Following

- **To prevent an accident caused by a short circuit, do not allow metal objects such as a necklace to touch the battery terminals. Carry the battery pack attaching to the terminal cover. [d] on page 33.**
- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor convert the battery pack.
- Do not expose the battery pack to any mechanical shock.

## Cellular Phone Battery Pack

This study is a review of the literature on cellular phone battery packs. The study is a review of the literature on cellular phone battery packs. The study is a review of the literature on cellular phone battery packs.



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## Mobile Phone Battery Pack

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## Maintenance Information and Precautions

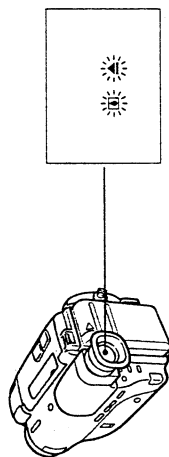
### Moisture Condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. If this happens, the tape may stick to the head drum and be damaged or the camcorder may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. However, take the following precautions.

#### Inside the Camcorder

When **[E]** and **[A]** indicators flash in the viewfinder, moisture has condensed inside the camcorder. If this happens, none of the functions except cassette ejection will work. **Eject the cassette turn off the camcorder, and leave it with the cassette compartment open for about 1 hour.**

If the **[E]** indicator does not light up when you turn on the power, you can use the camcorder again.



#### On the Surface of the Tape

If there is moisture on the surface of the tape, when you insert cassette and press a tape transport button (▶ **PLAY**, etc.), the **[A]** indicator flashes in the viewfinder. If this happens, none of the functions except cassette ejection will work.

**Eject the cassette and leave it for about 1 hour.**

If the **[A]** indicator does not light up when you insert the cassette and press a tape transport button, you can use the camcorder again.

#### On the Lens

No indicator will appear, but the picture becomes dim. Turn off the power and do not use the camcorder for about 1 hour.

#### How to Prevent Moisture Condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

- (1) Be sure to tightly seal the plastic bag containing the camcorder.
- (2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about one hour).

### Video Head Cleaning

To ensure clear pictures, clean the video heads periodically. When playback pictures are "noisy" or hardly visible, the video heads may be contaminated.



[a] → [b]

[a] Slight contamination

[b] Critical contamination  
If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied). After checking the picture, if it is still "noisy", repeat the cleaning. (Do not repeat cleaning more than 5 times.)

#### Caution

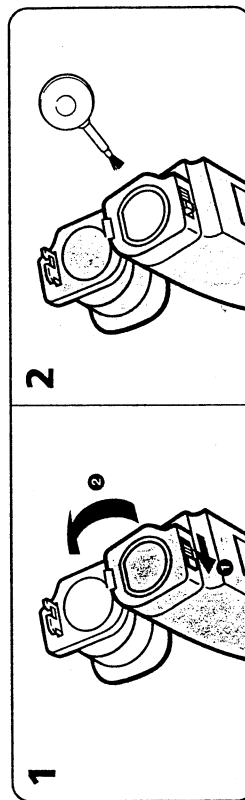
Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

#### Note

If the V8-25CLH cleaning cassette is not available in your area, consult your nearest Sony dealer.

### Removing Dust from inside the Viewfinder

- (1) While sliding the viewfinder release knob to the left, flip open the viewfinder. (2) Clean the surface with a commercially available blower.



## Maintenance Information and Inspection

**WARNING** **Do not use the engine for anything other than its intended purpose.** The engine is designed for use as a power source for the generator only. It is not designed for use as a pump, blower, or for any other purpose. Using the engine for anything other than its intended purpose may result in injury or death.

**Check the Generator:** Before using the generator, check the oil level, check the air filter, and check the generator for any damage. If the generator is damaged, do not use it.

**Check the Fuel:** Before using the generator, check the fuel level. If the fuel level is low, add fuel. Do not use gasoline with an octane rating of less than 87.



**Check the Oil:** Before using the generator, check the oil level. If the oil level is low, add oil. Do not use oil with a viscosity of less than 10W-30.

**Check the Air Filter:** Before using the generator, check the air filter. If the air filter is dirty, clean it. Do not use the generator if the air filter is dirty.

**Check the Spark Plug:** Before using the generator, check the spark plug. If the spark plug is worn, replace it. Do not use the generator if the spark plug is worn.

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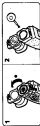
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## Maintenance Information and Precautions

### Precautions

#### Camcorder Operation

- Operate the camcorder using 6.0 V (battery pack), or 7.5 V (AC power adaptor).
- For DC or AC operation, use only the accessories recommended in this manual.
- Should any solid object or liquid fall into the casing, unplug the camcorder and have it checked by your nearest Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camera.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.

#### On Handling Tapes

Do not insert anything into the small holes on the rear of the cassette. These holes are used to sense the type, thickness of tape, or if the tab is out or in.

#### Camcorder Care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera and player sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on the lens, remove them with a soft cloth.
- Clean the camcorder body with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

#### AC Power Adaptor

**Charging**  
• Use only for the specified battery pack. This unit cannot be used to charge an NP-500 series battery pack.

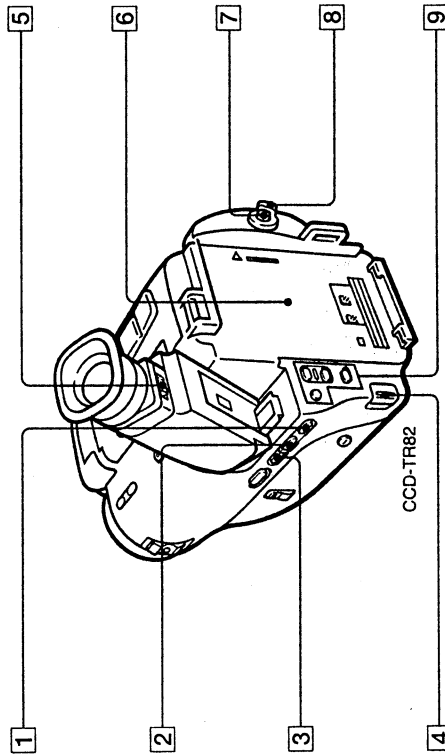
- Attach the battery pack firmly.
- Charge the battery pack on a flat surface without vibration.

#### Others

- The model for USA or Canada: One blade of the plug is wider than the other for the purpose of safety and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
  - Unplug the unit from the wall (mains) outlet when not in use for a long time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
  - Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
  - Do not bend the AC power cord forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.
  - Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
  - Always keep the metal contacts clean.
  - Do not disassemble the unit.
  - Do not apply mechanical shock or drop the unit.
  - While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
  - The unit becomes warm while in use. This is normal.
  - Do not place the unit in locations that are:
    - Extremely hot or cold
    - Dusty or dirty
    - Very humid
    - Vibrating
- If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

## Identifying the Parts

The illustrations in this section are of CCD-TR82.



- 1 COUNTER RESET button (p.12)
- 2 TIME button (p.20)
- 3 DATE button (p.20)
- 4 BATT (battery) release knob (p.8)
- 5 Viewfinder release knob (p.14, 37)
- 6 Battery mounting surface (p.8)
- 7 START/STOP button (p.11)
- 8 STANDBY switch (p.10, 11)
- 9 Menu operation buttons (p.25, 31)

## Male Reproductive System and Associated

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### Reproductive System

- The male reproductive system is a system of organs and glands that produce and transport sperm cells (spermatozoa) and secrete male sex hormones (androgens).
- The primary function of the male reproductive system is to produce and transport sperm cells.
- The secondary function of the male reproductive system is to secrete male sex hormones.
- The male reproductive system is located in the male pelvis.
- The male reproductive system is made up of the testes, vas deferens, ureters, and accessory glands.

The **testes** are the male sex glands that produce and secrete sperm cells and male sex hormones. They are located in the male scrotum.

- The **vas deferens** are the tubes that transport sperm cells from the testes to the ureters.
- The **ureters** are the tubes that transport urine from the kidneys to the bladder.
- The **accessory glands** are the glands that secrete fluids that mix with sperm cells to form semen.
- The accessory glands include the **prostate gland**, **seminal vesicle**, and **bulbourethral gland**.
- The **prostate gland** is a gland that is located below the bladder and through which the ureters and vas deferens pass.
- The **seminal vesicle** is a small gland located behind the bladder.
- The **bulbourethral gland** is a small gland located in the male scrotum.

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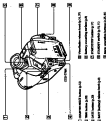
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## Identifying the Parts

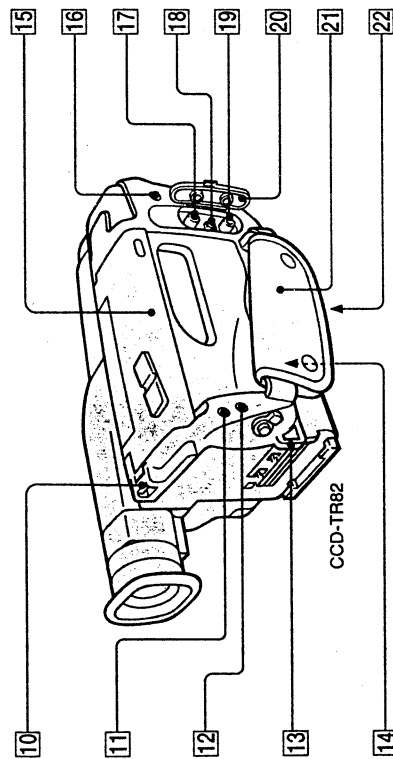
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- 1. Testis
- 2. Vas Deferens
- 3. Ureter
- 4. Prostate Gland
- 5. Seminal Vesicle
- 6. Bulbourethral Gland
- 7. Urethra
- 8. Penile Sheath
- 9. Penis
- 10. Scrotum

- 11. Testis
- 12. Vas Deferens
- 13. Ureter
- 14. Prostate Gland
- 15. Seminal Vesicle
- 16. Bulbourethral Gland
- 17. Urethra
- 18. Penile Sheath
- 19. Penis
- 20. Scrotum

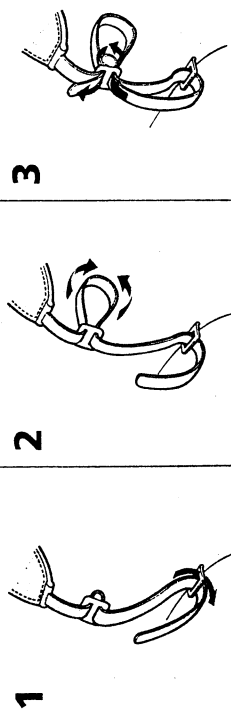
## Identifying the Parts



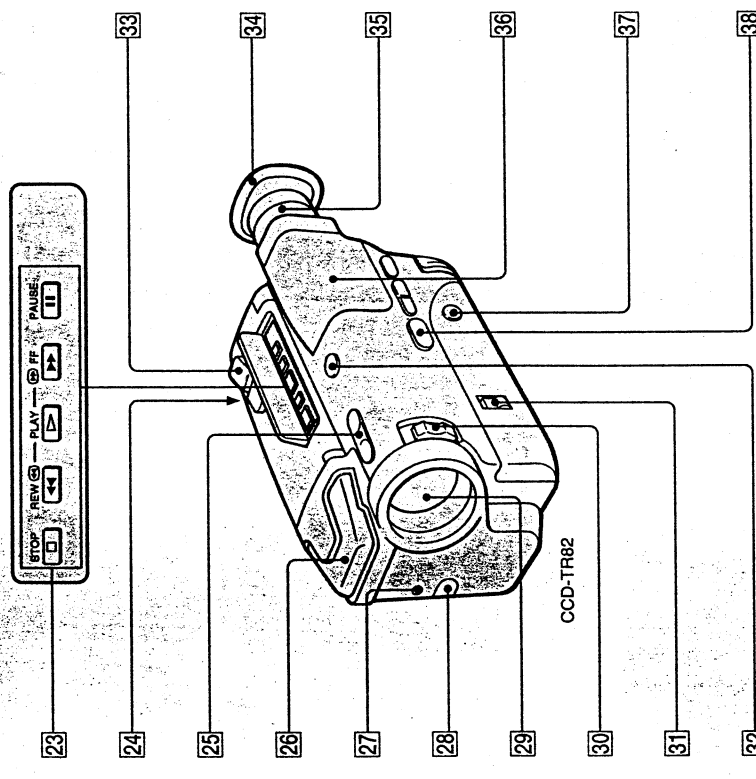
- 10 Hook for shoulder strap (below)
- 11 LANC  $\square$  control jack  
Connect the LANC  $\square$  connecting cable to a wired remote control unit such as an editing controller. In this case, set the COMMANDER mode to OFF in the menu system (p.25).  
 $\square$  stands for Local Application Control Bus system. The  $\square$  control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the connectors indicated as CONTROL L or REMOTE.
- 12  $\square$  (earphone) jack (CCD-TR42/TR70/TR82) (p.15)
- 13  $\square$  (headphones) jack (CCD-TR72/TR80) (p.15)
- 14 Hook for shoulder strap (below)
- 15 Lithium battery compartment (p.30)
- 16 Cassette compartment lid (p.9)
- 17 MIC (microphone) jack
- 18 VIDEO jack (p.16)
- 19 RFU DC OUT (RFU adaptor DC out) jack (p.16)
- 20 AUDIO jack (p.16)
- 21 Jack cover
- 22 Grip strap (p.14)
- 23 Tripod receptacle (p.14)  
Attach a tripod (not supplied) here. When attaching a non-Sony tripod, make sure that the length of the camera mounting screw is shorter than 9/32 inches (6.5 mm). Otherwise, the screw might damage the inner part of the camcorder.

### Attaching the shoulder strap

Attach the supplied shoulder strap to the hooks for the shoulder strap (10, 13).



## Identifying the Parts



- 23 Tape transport buttons (p.17)  
■ STOP  
◀◀ REW (rewind)  
▶▶ PLAY (playback)  
▶▶ FF (fast forward)  
|| PAUSE  
These buttons will function in PLAYER mode.
- 24 EJECT button (p.9)
- 25 EDIT/SEARCH button (p.15)
- 26 Built-in microphone
- 27 Camera recording/battery lamp
- 28 Remote sensor (p.49)
- 29 Lens cover
- 30 POWER switch (p.10, 11)
- 31 STEADY SHOT switch (p.24)
- 32 FADER button (p.23)
- 33 POWER ZOOM button (p.13)
- 34 Eyecup (p.14)
- 35 Viewfinder adjustment ring (p.10)
- 36 Viewfinder (p.10, 14)
- 37 BACK LIGHT button (p.21)
- 38 PROGRAM AE button (p.22)

# Identify parts (No. 1-11)



1. Head for cylinder (No. 1-2)
2. Head for cylinder (No. 3-4)
3. Head for cylinder (No. 5-6)
4. Head for cylinder (No. 7-8)
5. Head for cylinder (No. 9-10)
6. Head for cylinder (No. 11-12)
7. Head for cylinder (No. 13-14)
8. Head for cylinder (No. 15-16)
9. Head for cylinder (No. 17-18)
10. Head for cylinder (No. 19-20)
11. Head for cylinder (No. 21-22)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

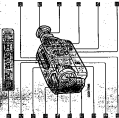
Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

Identify the cylinder (No. 1-11)

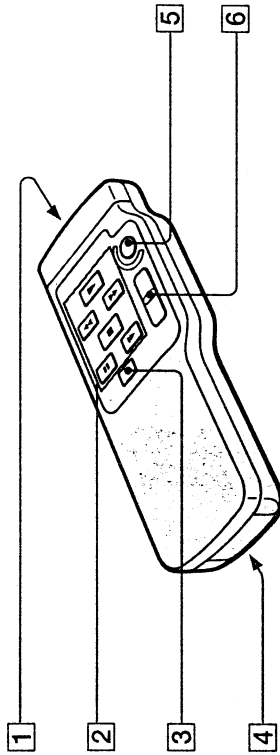


1. Head for cylinder (No. 1-2)
2. Head for cylinder (No. 3-4)
3. Head for cylinder (No. 5-6)
4. Head for cylinder (No. 7-8)
5. Head for cylinder (No. 9-10)
6. Head for cylinder (No. 11-12)
7. Head for cylinder (No. 13-14)
8. Head for cylinder (No. 15-16)
9. Head for cylinder (No. 17-18)
10. Head for cylinder (No. 19-20)
11. Head for cylinder (No. 21-22)

## Identifying the Parts

### Remote Commander

The buttons that have the same name on the Remote Commander and on the camcorder function identically.



**1 Transmitter** (p.49)

Point toward the remote sensor to control the camcorder after turning on the POWER switch on the camcorder.

**2 Tape transport buttons** (p.17)

The zooming speed is unchangeable on the Remote Commander.

**3 DISPLAY button** (p.18)

**4 Size AA (R6) battery holder**

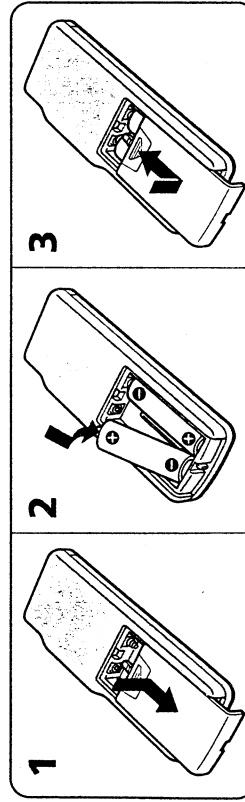
**5 START/STOP button**

**6 Power zoom button**

The zooming speed is unchangeable on the Remote Commander.

### Preparing the Remote Commander

To use the Remote Commander, you must insert two size AA (R6) batteries. Use the supplied size AA (R6) batteries. (1) Remove the battery cover from the Remote Commander. (2) Insert both of the size AA (R6) batteries with correct polarity. (3) Put the battery cover back onto the Remote Commander.



### Note on battery life

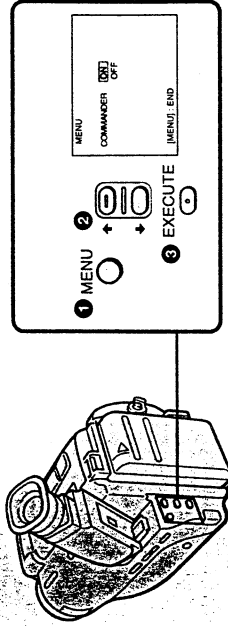
The batteries for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

### To avoid damage from possible battery leakage

Remove the batteries when you will not use the Remote Commander for a long time.

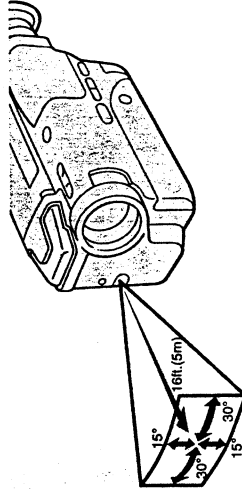
### Using the Remote Commander

Make sure that the COMMANDER mode is set to ON in the menu system (p.25).



### Remote Control Direction

Aim the Remote Commander to the remote sensor within the range as shown below.



### Notes on the Remote Commander

- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor and the Remote Commander.
- This camcorder works at commander mode VTR 2. The commander modes (1, 2, and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR at commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

## Identifying the Parts

**Identifying the Parts**

Identify the four components of the Remote Control and write complete labels carefully.



1. Identify the four components of the Remote Control.
2. Write complete labels for the four components.
3. Write the name of the four components.
4. Write the function of the four components.

**Identifying the Remote Control**

The Remote Control is a device that is used to control the television. It is a small, handheld device that is used to control the television. It is a small, handheld device that is used to control the television.



Write the name of the Remote Control in the space provided. Write the function of the Remote Control in the space provided.

Write the name of the Remote Control in the space provided.

Write the function of the Remote Control in the space provided.

Identify the Remote Control and write the four components of the Remote Control.

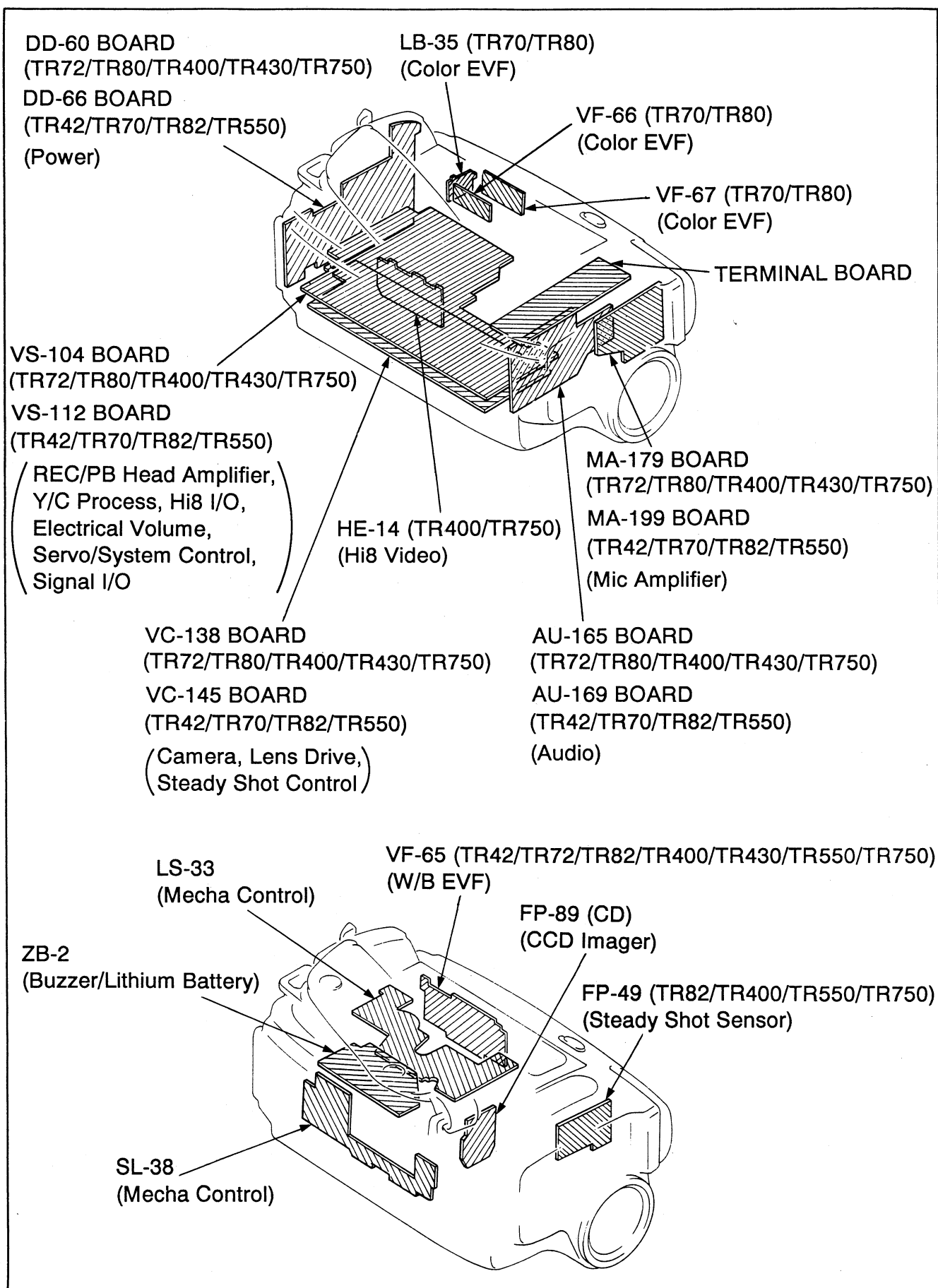
**Identifying the Remote Control**

The Remote Control is a device that is used to control the television. It is a small, handheld device that is used to control the television.

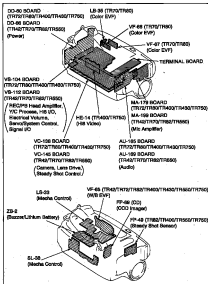
**Identifying the Remote Control**

The Remote Control is a device that is used to control the television. It is a small, handheld device that is used to control the television. It is a small, handheld device that is used to control the television.

## 2-14. CIRCUIT BOARDS LOCATION



## 2-14. CIRCUIT BOARD LOCATION

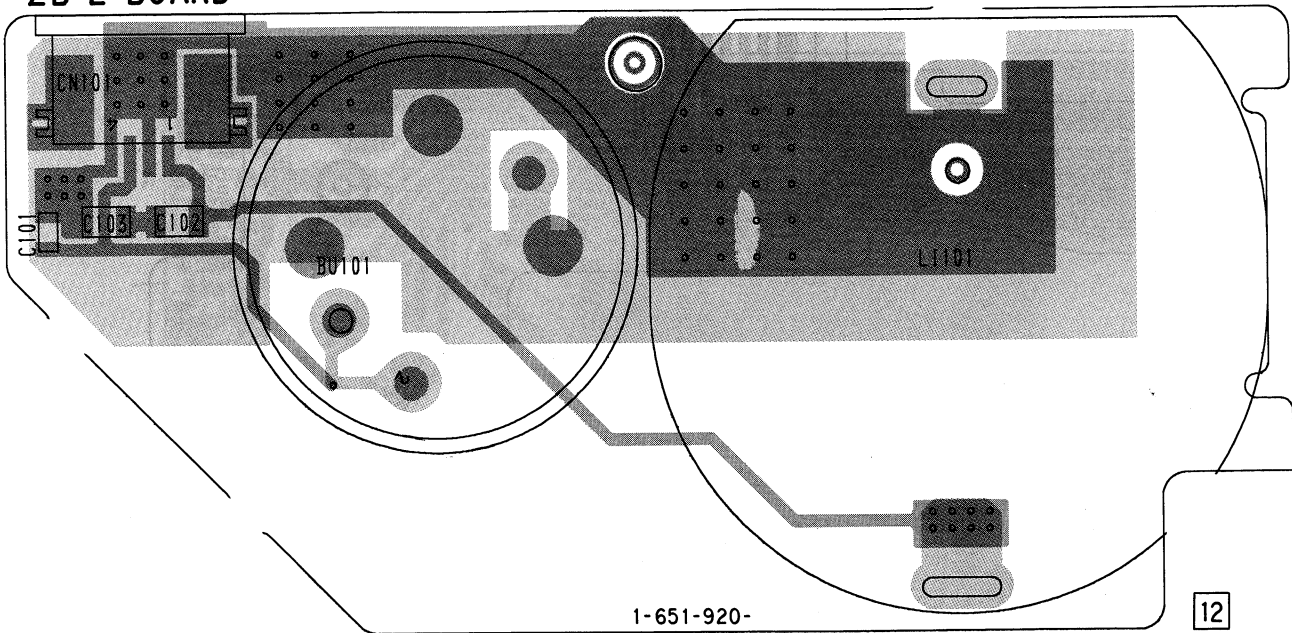




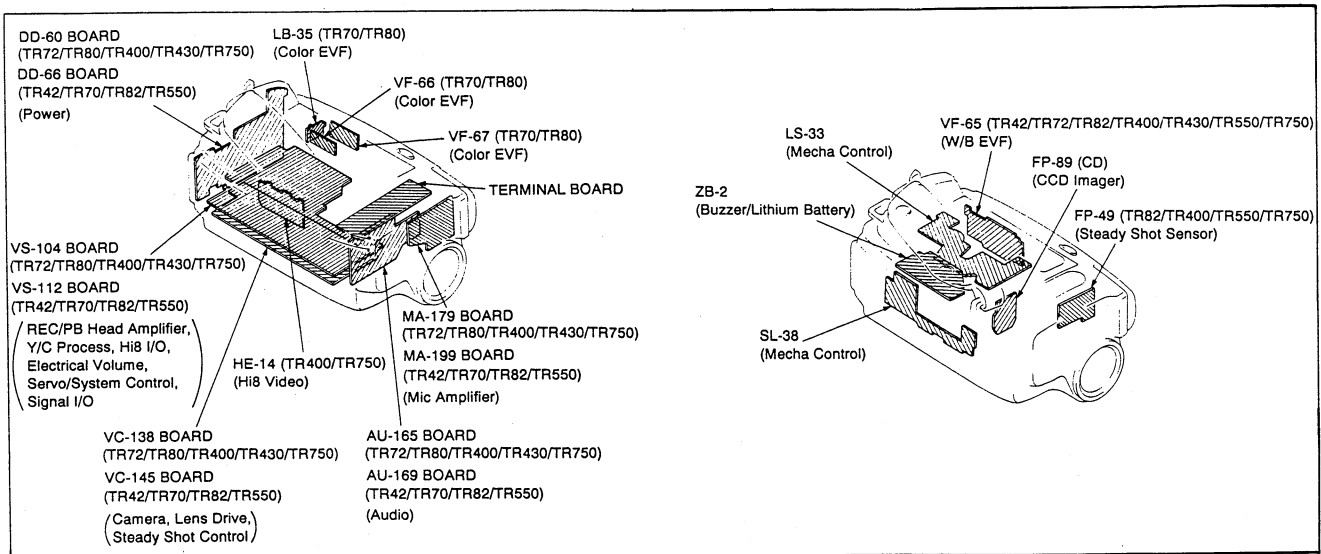
## ZB-2 (BUZZER/LITHIUM BATTERY) PRINTED WIRING BOARD

— Ref. No. ZB-2 BOARD: 4000 series —

### ZB-2 BOARD



- For printed wiring board of ZB-2 board.
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.



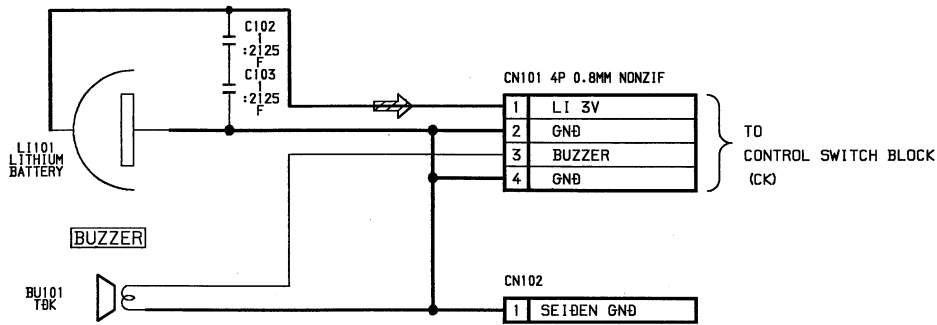


ZB-2 (BUZZER/LITHIUM BATTERY) SCHEMATIC DIAGRAM

— Ref. No. ZB-2 BOARD: 4000 series —

ZB-2 BOARD

•CONTROL SWITCH BLOCK (CK)  
Is replaced as a block, so that there  
SCHEMATIC DIAGRAM  
PRINTED WIRING BOARD  
is omitted.



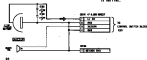
09

ZB-2 (NICKEL-CADMIUM BATTERY) SCHEMATIC DIAGRAM

— Ref. No. ZB-2 (CCD-400) 400 series —

ZB-2 BOARD

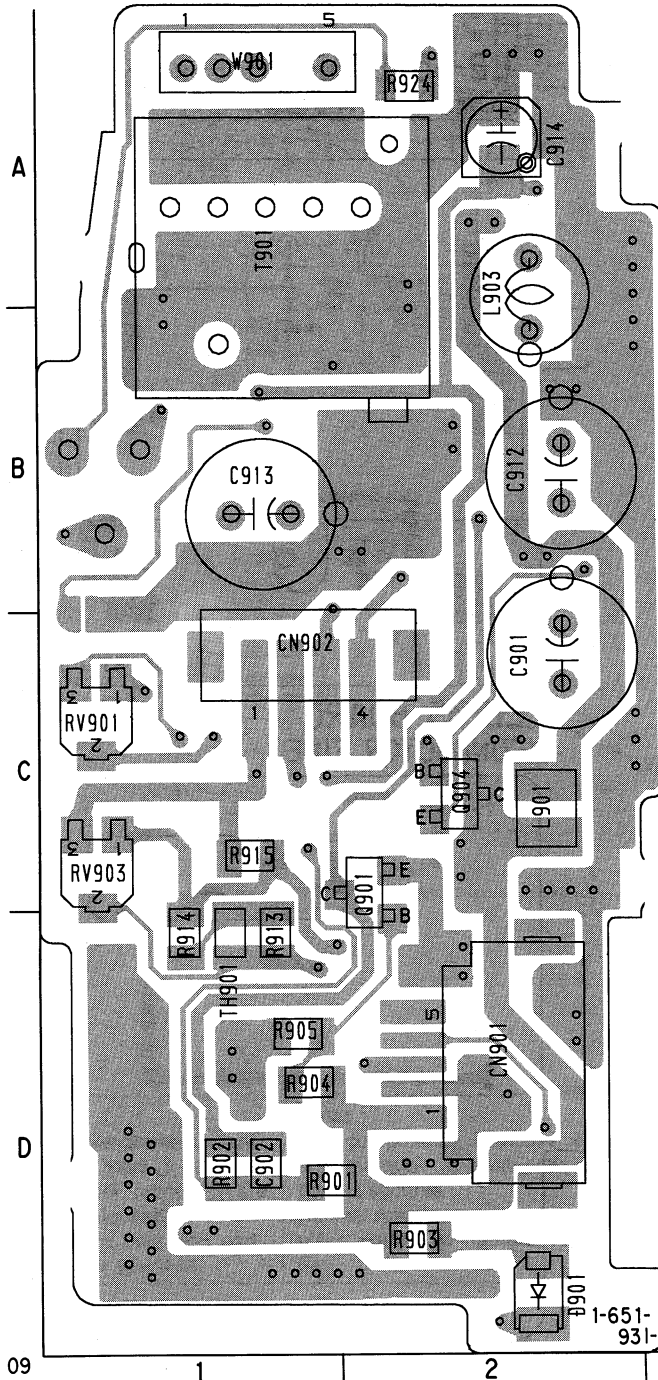
CONTROL SWITCH BLADE, 800  
IN. INTERLOCK IN 2 WIRE, 800 FOOT BOARD  
CONTROL TO BATTERY  
POWERED WOUND BOARD  
IN 100 FOOT.



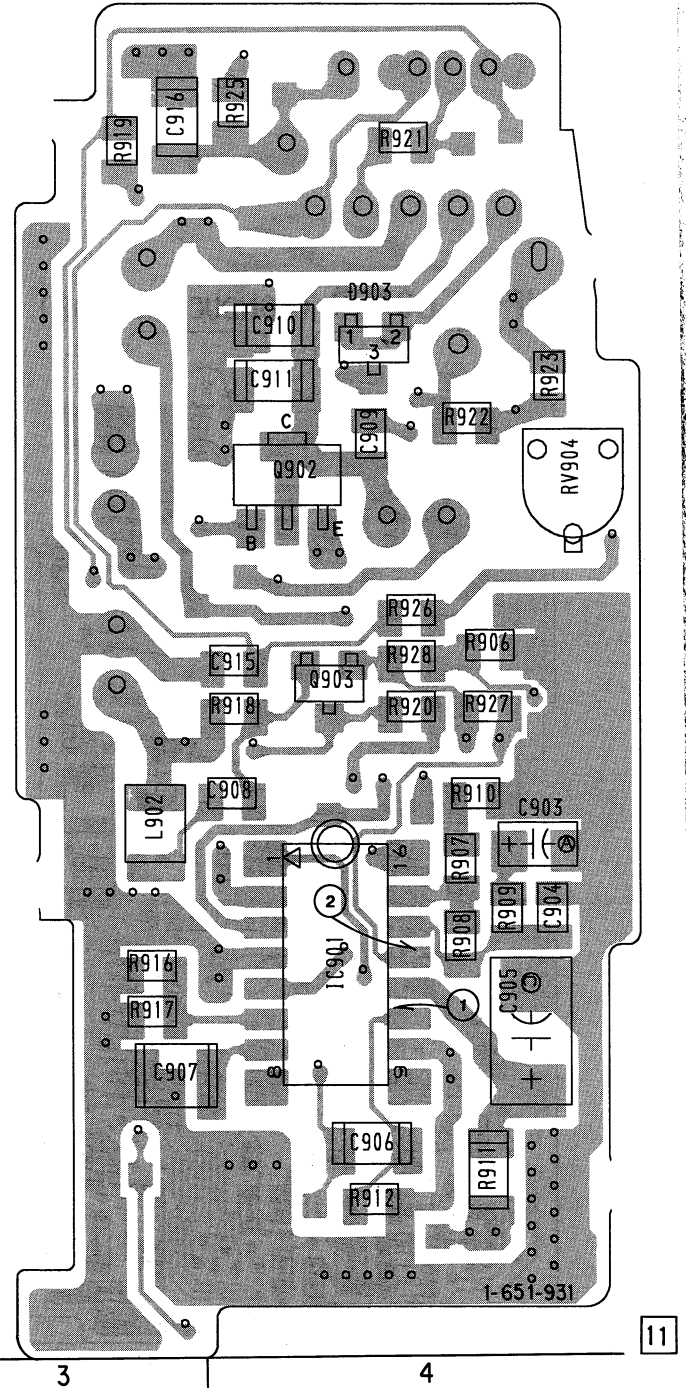
# VF-65 (W/B EVF) PRINTED WIRING BOARD (TR42/TR72/TR82/TR400/TR430/TR550/TR750)

— Ref. No. VF-65 BOARD: 8000 series —

## VF-65 BOARD (COMPONENT SIDE)



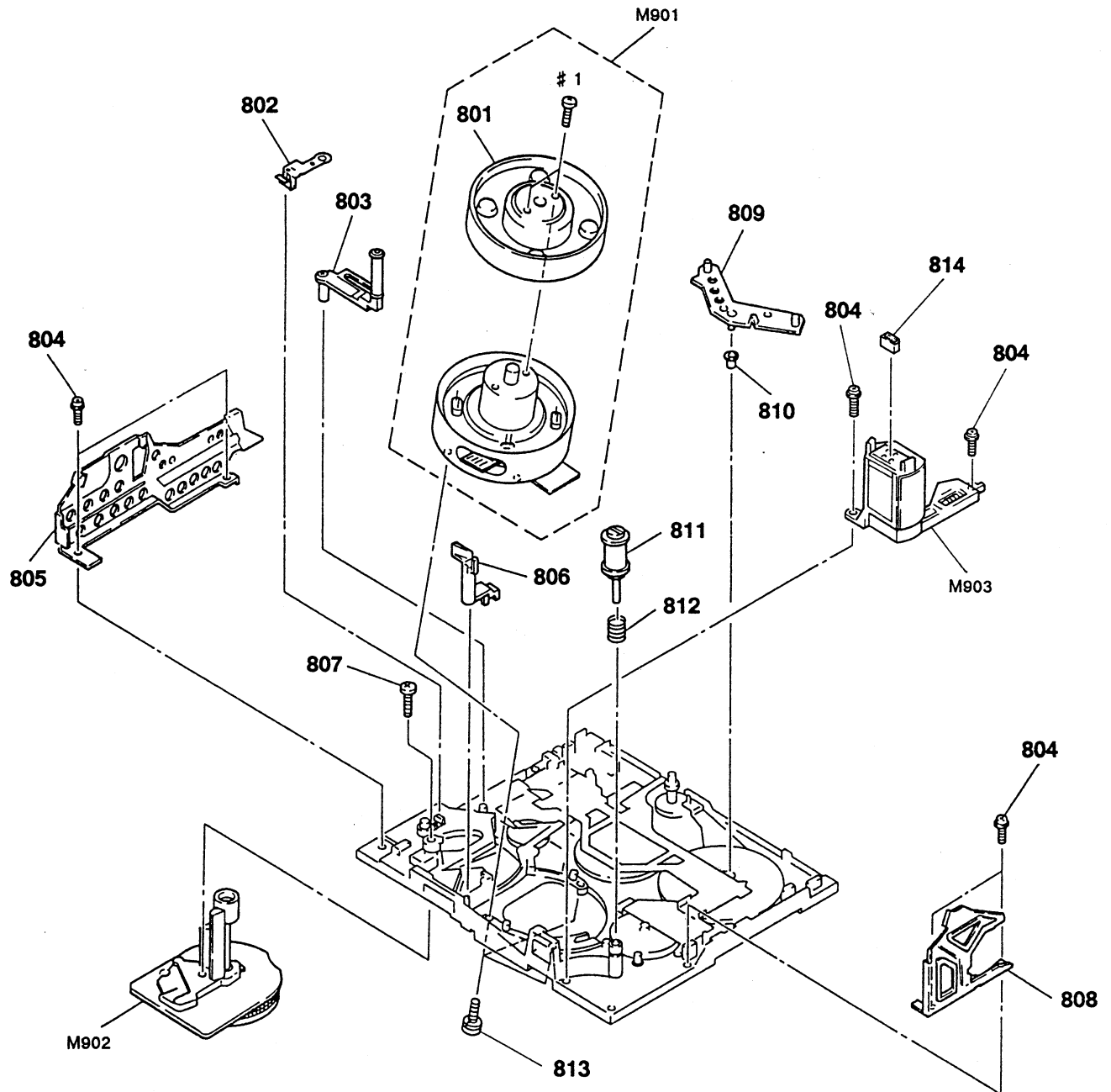
## VF-65 BOARD (CONDUCTOR SIDE)



- For printed wiring boards.
- VF-65 board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.

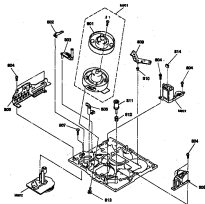


# 5-1-10. MECHANISM CHASSIS ASSEMBLY (1)



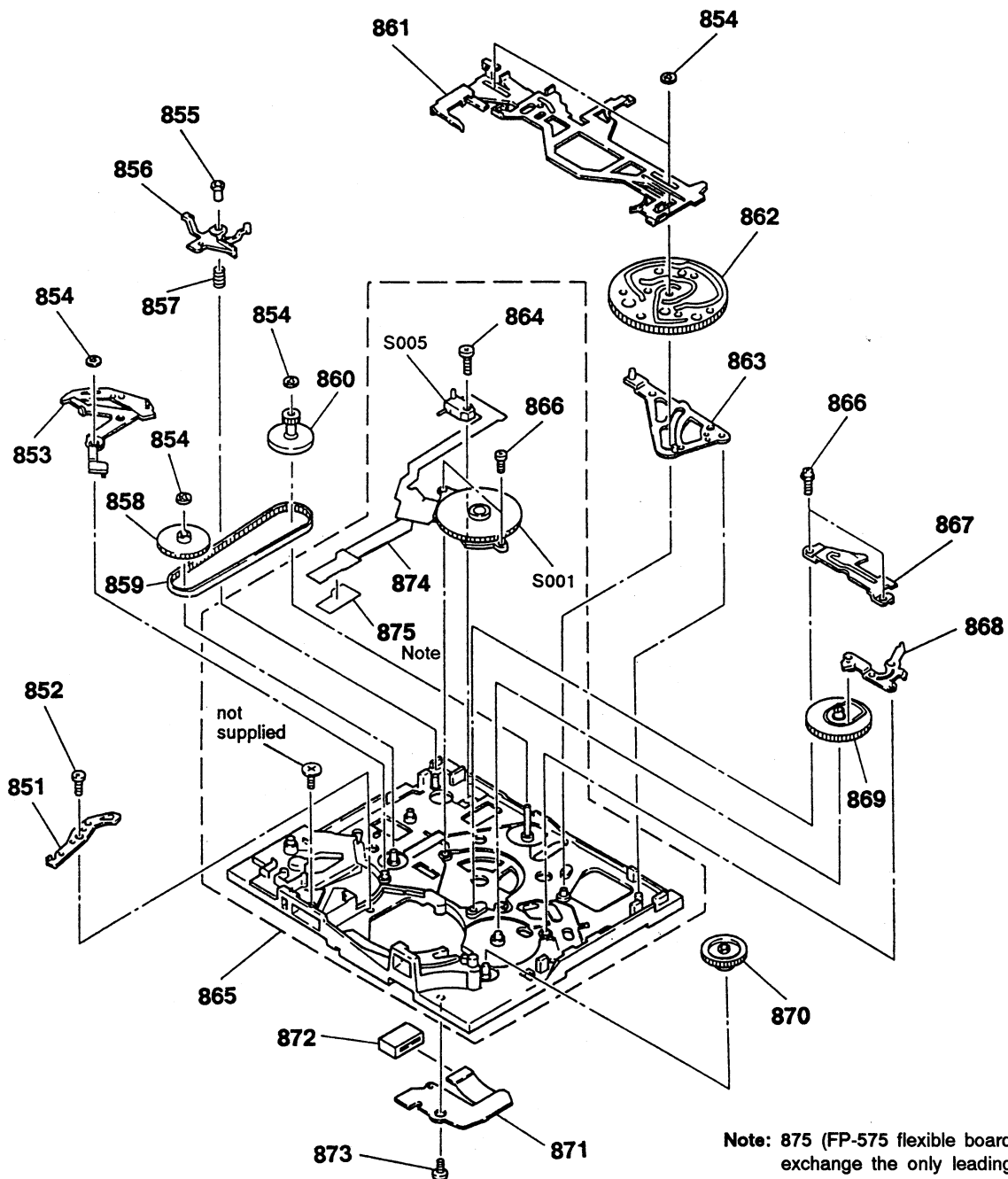
Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
801	A-7049-501-A	DRUM ASSY, UPPER (DGR-78-R) (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		810	3-945-702-01	ROLLER, LS	
801	A-7049-567-A	DRUM ASSY, UPPER (DGR-92-R) (TR400/TR750)		811	X-3941-262-1	ROLLER ASSY, TG2	
802	3-945-822-01	SPRING, LEAF, TG7 ARM		812	3-956-651-01	SPRING, COMPRESSION	
803	A-7040-305-A	ARM BLOCK ASSY, TG7		813	3-686-493-01	SCREW (M2X5), P1	
804	3-947-503-01	SCREW (M1.4X2.5)		814	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P	
805	X-3941-255-1	PLATE (T) ASSY, SIDE		M901	A-7048-564-A	DRUM ASSY (DGH-78A-R) (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
806	3-945-735-01	ARM, HC CONVERSION		M901	A-7048-633-A	DRUM ASSY (DGH-92A-R) (TR400/TR750)	
807	3-713-786-71	SCREW (M2X5)		M902	8-835-477-12	MOTOR, DC SCE-0101A (CAPSTAN)	
808	3-945-691-01	PLATE (S), SIDE		M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	
809	3-945-701-01	ARM, LS					

**Abstract**

[illegible]



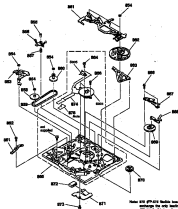
# 5-1-11. MECHANISM CHASSIS ASSEMBLY (2)



Note: 875 (FP-575 flexible board) is part that exchange the only leading part of 874 (FP-442 flexible board).

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
851	3-945-734-01	ARM, HC DRIVING		865	A-7040-303-A	CHASSIS ASSY, MECHANICAL	
852	3-728-103-11	SCREW (M1.4X1.6), SPECIAL HEAD		866	3-947-503-01	SCREW (M1.4X2.5)	
853	X-3941-259-1	ARM ASSY, PINCH PRESS		867	3-945-722-01	RETAINER, GEAR	
854	3-726-829-01	WASHER, STOPPER		868	X-3941-257-1	ARM ASSY, FF	
855	3-945-730-01	SLEEVE, EJECT		869	3-945-697-01	GEAR (B), L	
856	3-945-706-01	LEVER, EJECT		870	3-945-700-01	GEAR (A), L	
857	3-945-729-01	SPRING, COMPRESSION		871	1-641-643-12	FP-444 FLEXIBLE BOARD	
858	X-3941-256-1	GEAR ASSY, CHANGE		872	1-691-254-13	CONNECTOR, TRANSLATION 10P	
859	3-944-539-01	BELT, RELAY		873	3-945-756-01	SCREW (M1.4X3)	
860	3-945-695-01	PULLEY, RELAY		874	1-641-639-13	FP-442 FLEXIBLE BORD	
861	X-3941-260-1	SLIDER ASSY, M		875	1-645-271-11	FP-575 FLEXIBLE BORD	
862	3-945-696-02	CAM		S001	1-572-986-11	SWITCH, ROTARY (ENCODER)	
863	X-3941-258-1	ARM ASSY, GL		S005	1-570-771-21	SWITCH (C DOWN)	
864	3-713-786-71	SCREW (M2X5)					

# 5-4-11. RECOIL SPRING CHAMBER ASSEMBLY (2)



Ref. No.	Ref. No.	Description	Ref. No.
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	

Ref. No.	Ref. No.	Description	Ref. No.
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	

# AU-165

## 5-2. ELECTRICAL PARTS LIST

### NOTE:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable
- Hardware (# mark) list is given in the last of this parts list.
- Canadian model is abbreviated as CND.

- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$  A..., uPA...:  $\mu$  PA...,  
uPB...:  $\mu$  PB..., uPC...:  $\mu$  PC...,  
uPD...:  $\mu$  PD...
- CAPACITORS  
uF:  $\mu$  F
- COILS  
uH:  $\mu$  H

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-7063-958-A	AU-165 BOARD, COMPLETE ***** (TR72/TR80/TR400/TR430/TR750) (Ref. No. 10, 000 Series)		C1345	1-162-967-11	CERAMIC CHIP 0.0033uF 10%	50V
		< CAPACITOR >		C1346	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1302	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C1347	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1303	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	C1348	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1304	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	C1349	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1305	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	C1350	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1306	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1352	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1307	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1353	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1308	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	C1355	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C1309	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1356	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C1310	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1357	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C1311	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1358	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1312	1-126-205-11	ELECT CHIP 47uF 20%	6.3V	C1359	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1313	1-162-953-11	CERAMIC CHIP 100PF 5%	50V	C1360	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1314	1-162-953-11	CERAMIC CHIP 100PF 5%	50V	C1361	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1315	1-126-209-11	ELECT 100uF 20%	4V	C1362	1-162-969-11	CERAMIC CHIP 0.0068uF 10%	25V
C1316	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V	C1363	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1318	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	C1364	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V
C1319	1-162-953-11	CERAMIC CHIP 100PF 5%	50V			< CONNECTOR >	
C1321	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	CN1301	1-691-490-21	CONNECTOR, FFC/FPC 11P	
C1323	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V	*	CN1302	1-691-933-11	CONNECTOR, BOARD TO BOARD 34P
C1326	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V			< DIODE >	
C1327	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	D1302	8-719-404-46	DIODE MA110	
C1328	1-135-091-21	TANTAL. CHIP 1uF 20%	16V	D1303	8-719-045-87	DIODE MA4Z082WA-TX	
C1329	1-135-091-21	TANTAL. CHIP 1uF 20%	16V	D1304	8-719-045-87	DIODE MA4Z082WA-TX	
C1330	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V			< FILTER >	
C1331	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V	FL402	1-236-838-21	FILTER, BAND PASS (1.7MHz)	
C1332	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V	FL1302	1-236-837-21	FILTER, BAND PASS (1.5MHz)	
C1333	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V			< IC >	
C1334	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	IC402	8-759-234-77	IC TC4S66F	
C1335	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	IC1301	8-759-159-94	IC LA7491W-TBM	
C1336	1-135-148-21	TANTAL. CHIP 1.5uF 20%	10V			< TRANSISTOR >	
C1337	1-135-148-21	TANTAL. CHIP 1.5uF 20%	10V	Q1301	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1338	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1302	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1339	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1303	8-729-403-35	TRANSISTOR UN5113	
C1340	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1305	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1341	1-162-966-11	CERAMIC CHIP 0.0022uF 10%	50V	Q1306	8-729-230-63	TRANSISTOR 2SC4116-YG	
C1343	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V				
C1344	1-164-346-11	CERAMIC CHIP 1uF 16V					

1000



The temperature is lowered by passing air or coolant from within inside the wire around the cavity.

Les entreprises choisissent par une moyenne d. une entreprise pour la servir.

When considering your top reference sources, please include the source.

- Two **mechanical** (physical) replacements in the parts list may be different from the part specified in the drawing or the component listed in the text.
- **AND**, if two mechanical parts, as they may have some difference from the original one.
- **REMARKS**
  - All remarks were also written down the relevant **REMARKS** (Remarks) column of the relevant **ITEM** (Item).
- **REMARKS** (Remarks) column is the last of the parts list.
- **REMARKS** (Remarks) column is the last of the parts list.

- **Types of acid** "w" are not needed when they are obvious, required for better science, these days should be indicated after relating their name.
- **NAME CHANGES**
  - In each row, a p. for example:
    - acetic acid,  $\text{CH}_3\text{COOH}$ ,  $\text{CH}_3\text{CO}_2\text{H}$
    - $\text{CH}_3\text{CO}_2\text{H}$ ,  $\text{CH}_3\text{CO}_2\text{H}$ ,  $\text{CH}_3\text{CO}_2\text{H}$ ,  $\text{CH}_3\text{CO}_2\text{H}$
    - $\text{CH}_3\text{CO}_2\text{H}$ ,  $\text{CH}_3\text{CO}_2\text{H}$
- **CHARACTERISTICS**
  - $\text{CH}_3\text{CO}_2\text{H}$
  - $\text{CH}_3\text{CO}_2\text{H}$
  - $\text{CH}_3\text{CO}_2\text{H}$

[illegible]





**AU-169****DD-60****DD-66**

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C426	1-162-957-11	CERAMIC CHIP	220PF 5% 50V	R416	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
C428	1-128-006-11	ELECT CHIP	4.7uF 20% 25V	R417	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
C429	1-128-013-11	ELECT CHIP	1uF 20% 50V	R418	1-216-851-11	METAL CHIP	330K 5% 1/16W
C430	1-128-004-11	ELECT CHIP	10uF 20% 16V	R419	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
C431	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V	R420	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
C432	1-164-674-11	CERAMIC CHIP	1800PF 5% 16V	R421	1-216-864-11	METAL CHIP	0 5% 1/16W
C433	1-164-346-11	CERAMIC CHIP	1uF 16V	R423	1-216-839-11	METAL CHIP	33K 5% 1/16W
C434	1-128-003-11	ELECT CHIP	22uF 20% 4V	R424	1-216-833-11	METAL CHIP	10K 5% 1/16W
C435	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	R425	1-216-810-11	METAL CHIP	120 5% 1/16W
C436	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	R427	1-216-817-11	METAL CHIP	470 5% 1/16W
C437	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	R428	1-216-833-11	METAL CHIP	10K 5% 1/16W
C438	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	R429	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
C439	1-128-004-11	ELECT CHIP	10uF 20% 16V	R430	1-216-841-11	METAL CHIP	47K 5% 1/16W
C440	1-162-974-11	CERAMIC CHIP	0.01uF 50V	R431	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
C441	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	R432	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
C442	1-162-974-11	CERAMIC CHIP	0.01uF 50V	R433	1-216-817-11	METAL CHIP	470 5% 1/16W
< CONNECTOR >				R434	1-216-821-11	METAL CHIP	1K 5% 1/16W
CN401	1-691-516-11	CONNECTOR, BOARD TO BOARD 24P		R435	1-216-836-11	METAL CHIP	18K 5% 1/16W
CN402	1-691-487-21	CONNECTOR, FFC/FPC 8P		R436	1-216-837-11	METAL CHIP	22K 5% 1/16W
< DIODE >				*****			
D402	8-719-045-87	DIODE MA4Z082WA-TX		*	A-7063-960-A	DD-60 BOARD, COMPLETE	
< IC >						*****	
IC401	8-759-823-19	IC CXA1488RR				(TR72/TR400/TR430/TR750)	
< COIL >				*	A-7066-009-A	DD-60 BOARD, COMPLETE (TR80)	
L401	1-412-954-11	INDUCTOR 18uH				*****	
< TRANSISTOR >				*	A-7063-954-A	DD-66 BOARD, COMPLETE (TR42/TR82/TR550)	
Q402	8-729-230-63	TRANSISTOR 2SC4116				*****	
Q403	8-729-230-63	TRANSISTOR 2SC4116		*	A-7066-006-A	DD-66 BOARD, COMPLETE (TR70)	
Q404	8-729-402-81	TRANSISTOR XN4501				*****	
Q405	8-729-402-42	TRANSISTOR UN5213				(Ref. No. 9,000 Series)	
Q406	8-729-403-35	TRANSISTOR UN5113		< CAPACITOR >			
< RESISTOR >				C901	1-163-989-11	CERAMIC CHIP	0.033uF 10% 25V
R401	1-216-849-11	METAL CHIP	220K 5% 1/16W	C902	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
R402	1-216-864-11	METAL CHIP	0 5% 1/16W	C903	1-163-121-00	CERAMIC CHIP	150PF 5% 50V
R403	1-216-859-11	METAL GLAZE	1.5M 5% 1/16W	C904	1-163-121-00	CERAMIC CHIP	150PF 5% 50V
R404	1-216-851-11	METAL CHIP	330K 5% 1/16W	C906	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V
R407	1-216-837-11	METAL CHIP	22K 5% 1/16W	C907	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R409	1-216-833-11	METAL CHIP	10K 5% 1/16W	C908	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R410	1-216-840-11	METAL CHIP	39K 5% 1/16W	C909	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R411	1-216-833-11	METAL CHIP	10K 5% 1/16W	C910	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
R412	1-216-821-11	METAL CHIP	1K 5% 1/16W	C911	1-162-963-11	CERAMIC CHIP	680PF 10% 50V
R413	1-216-835-11	METAL CHIP	15K 5% 1/16W	C912	1-128-530-11	ELECT CHIP	33uF 20% 10V
R415	1-216-849-11	METAL CHIP	220K 5% 1/16W	C913	1-128-004-11	ELECT CHIP	10uF 20% 16V
				C914	1-128-004-11	ELECT CHIP	10uF 20% 16V
				C915	1-165-178-11	CERAMIC CHIP	6.8uF 16V
				C916	1-128-004-11	ELECT CHIP	10uF 20% 16V
				C917	1-165-178-11	CERAMIC CHIP	6.8uF 16V





Ref.No.	Part No.	Description		Remark	Ref.No.	Part No.	Description	Remark	
C918	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	J903	1-568-027-11	JACK, SMALL TYPE 1P (EARPHONE)		
C920	1-165-178-11	CERAMIC CHIP	6. 8uF	16V			(TR42/TR70/TR82/TR550)		
C921	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	J903	1-569-809-11	JACK (SMALL TYPE) (HEADPHONES)		
C923	1-165-178-11	CERAMIC CHIP	6. 8uF	16V			(TR72/TR80/TR400/TR430/TR750)		
C924	1-165-178-11	CERAMIC CHIP	6. 8uF	16V			< COIL >		
C925	1-164-337-11	CERAMIC CHIP	2. 2uF	16V	L901	1-424-653-11	COIL, CHOKE 10uH		
C926	1-164-337-11	CERAMIC CHIP	2. 2uF	16V	L902	1-424-653-11	COIL, CHOKE 10uH		
C927	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	L903	1-424-653-11	COIL, CHOKE 10uH		
C928	1-165-178-11	CERAMIC CHIP	6. 8uF	16V	L904	1-409-556-11	COIL, CHOKE 47uH		
C929	1-135-216-11	TANTALUM CHIP	10uF	20%	10V	L905	1-424-674-11	COIL, CHOKE 22uH	
C930	1-107-418-11	ELECT CHIP	10uF	20%	35V	L906	1-409-556-11	COIL, CHOKE 47uH	
C931	1-128-004-11	ELECT CHIP	10uF	20%	16V	L907	1-424-674-11	COIL, CHOKE 22uH	
C932	1-128-004-11	ELECT CHIP	10uF	20%	16V	L908	1-424-674-11	COIL, CHOKE 22uH	
C934	1-128-004-11	ELECT CHIP	10uF	20%	16V	L909	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C935	1-128-004-11	ELECT CHIP	10uF	20%	16V	L910	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C936	1-128-004-11	ELECT CHIP	10uF	20%	16V	L911	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C937	1-128-004-11	ELECT CHIP	10uF	20%	16V	L912	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C938	1-128-004-11	ELECT CHIP	10uF	20%	16V	L913	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C939	1-163-023-00	CERAMIC CHIP	0. 015uF	5%	50V	L914	1-412-064-11	INDUCTOR CHIP 100uH	
C940	1-163-023-00	CERAMIC CHIP	0. 015uF	5%	50V	L915	1-412-064-11	INDUCTOR CHIP 100uH	
C941	1-163-019-00	CERAMIC CHIP	0. 0068uF	10%	50V	L916	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C942	1-163-009-11	CERAMIC CHIP	0. 001uF	10%	50V	L917	1-412-056-11	INDUCTOR CHIP 4. 7uH	
C943	1-163-019-00	CERAMIC CHIP	0. 0068uF	10%	50V			< TRANSISTOR >	
C944	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V	Q900	8-729-421-90	TRANSISTOR XN4113 (TR70/TR80)	
C945	1-128-530-11	ELECT CHIP	33uF	20%	10V	Q901	8-729-420-12	TRANSISTOR XN4213	
C950	1-128-004-11	ELECT CHIP	10uF	20%	16V	Q902	8-729-804-41	TRANSISTOR 2SB1122	
		< CONNECTOR >			Q903	8-729-823-82	TRANSISTOR FP101		
CN901	1-695-324-11	CONNECTOR, BOARD TO BOARD 42P			Q904	8-729-823-84	TRANSISTOR FP102		
		< DIODE >			Q905	8-729-823-82	TRANSISTOR FP101		
D900	8-719-045-87	DIODE MA4Z082WA			Q906	8-729-823-82	TRANSISTOR FP101		
D901	8-719-027-77	DIODE MA796			Q907	8-729-823-82	TRANSISTOR FP101		
D902	8-719-045-87	DIODE MA4Z082WA			Q908	8-729-420-12	TRANSISTOR XN4213 (TR70/TR80)		
		(TR72/TR80/TR400/TR430/TR750)			Q909	8-729-805-25	TRANSISTOR 2SB1121		
D909	8-719-404-49	DIODE MA111			Q910	8-729-429-32	TRANSISTOR UN9210-QRS (TR70/TR80)		
D910	8-719-404-49	DIODE MA111			Q911	8-729-402-42	TRANSISTOR UN5213		
		< FUSE >			Q912	8-729-420-24	TRANSISTOR 2SB1218A		
△F450	1-576-213-11	FUSE, CHIP (1. 6A 125V)			Q914	8-729-402-42	TRANSISTOR UN5213		
△F451	1-576-213-11	FUSE, CHIP (1. 6A 125V)			Q915	8-729-402-42	TRANSISTOR UN5213		
△F452	1-576-213-11	FUSE, CHIP (1. 6A 125V)					< RESISTOR >		
		< IC >			R901	1-218-872-11	METAL CHIP 11K 0. 50% 1/16W		
IC901	8-759-249-14	IC MB3799-02PFV-GBND-ER			R902	1-216-833-11	METAL CHIP 10K 5% 1/16W		
		< JACK >			R903	1-216-827-11	METAL CHIP 3. 3K 5% 1/16W		
J901	1-537-281-41	TERMINAL BOARD (BATTERY)			R904	1-216-827-11	METAL CHIP 3. 3K 5% 1/16W		
J902	1-565-276-21	JACK, ULTRA SMALL 1P (REMOTE)			R905	1-216-836-11	METAL CHIP 18K 5% 1/16W		
					R906	1-216-827-11	METAL CHIP 3. 3K 5% 1/16W		
					R907	1-216-035-00	METAL CHIP 270 5% 1/10W		
					R908	1-216-834-11	METAL CHIP 12K 5% 1/16W		
					R909	1-216-031-00	METAL CHIP 180 5% 1/10W		

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.



**DD-60****DD-66****FP-49****FP-89 (CD)**

Ref. No.	Part No.	Description	Remark
R910	1-216-029-00	METAL CHIP 150 5% 1/10W	
R911	1-216-029-00	METAL CHIP 150 5% 1/10W	
R912	1-216-029-00	METAL CHIP 150 5% 1/10W	
R913	1-216-041-00	METAL CHIP 470 5% 1/10W	
R915	1-216-864-11	METAL CHIP 0 5% 1/16W	
R918	1-216-819-11	METAL CHIP 680 5% 1/16W	
R919	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R920	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R921	1-412-052-21	INDUCTOR CHIP 1uH	
R922	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R923	1-412-052-21	INDUCTOR CHIP 1uH	
R924	1-412-979-21	INDUCTOR 1uH	
R925	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R926	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R931	1-216-864-11	METAL CHIP 0 5% 1/16W	
R932	1-412-979-21	INDUCTOR 1uH	
R933	1-412-979-21	INDUCTOR 1uH (TR72/TR80/TR400/TR430/TR750)	
R934	1-216-864-11	METAL CHIP 0 5% 1/16W	
R936	1-412-979-21	INDUCTOR 1uH	
R937	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R938	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R939	1-216-864-11	METAL CHIP 0 5% 1/16W (TR70/TR80)	
R940	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R941	1-218-849-11	METAL CHIP 1.2K 0.50% 1/16W	
R942	1-216-864-11	METAL CHIP 0 5% 1/16W	
R943	1-216-864-11	METAL CHIP 0 5% 1/16W (TR70/TR80)	
R944	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
R945	1-218-847-11	METAL CHIP 1K 0.50% 1/16W	
R946	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR70/TR80)	
R947	1-216-828-11	METAL CHIP 3.9K 5% 1/16W (TR70/TR80)	
R948	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR70/TR80)	
R949	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR70/TR80)	
< TRANSFORMER >			
T901	1-426-730-11	TRANSFORMER, CONVERTER	

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Ref. No.	Part No.	Description	Remark
*	1-651-890-11	FP-49 FLEXIBLE BOARD ***** (TR82/TR400/TR550/TR750) (Ref. No. 3,000 Series)	
< SENSOR >			
SE691	1-810-024-31	SENSOR, ANGULAR VELOCITY	
SE692	1-810-024-41	SENSOR, ANGULAR VELOCITY	
*****			
*	A-7072-004-A	FP-89 (CD) BOARD, COMPLETE ***** (TR82/TR400/TR550/TR750)	
*	A-7072-005-A	FP-89 (CD) BOARD, COMPLETE ***** (TR42/TR70/TR72/TR80/TR430) (Ref. No. 3,000 Series)	
< CAPACITOR >			
C691	1-135-214-21	TANTAL. CHIP 4.7uF 20% 20V	
C692	1-135-210-11	TANTALUM CHIP 4.7uF 20% 10V	
C694	1-164-346-11	CERAMIC CHIP 1uF 16V	
C695	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C696	1-104-908-11	TANTAL. CHIP 47uF 20% 4V	
< IC >			
IC691	A-7030-368-A	CCD BLOCK ASSY (AUTO) (054 SERVICE) (CCD IMAGER) (TR42/TR70/TR72/TR80/TR430)	
IC691	A-7030-373-A	CCD BLOCK ASSY (AUTO) (059V SERVICE) (CCD IMAGER) (TR82/TR400/TR550/TR750)	
< COIL >			
L691	1-412-963-11	INDUCTOR 100uH	
< TRANSISTOR >			
Q691	8-729-232-86	TRANSISTOR 2SK1875-BL/V	
Q692	8-729-117-73	TRANSISTOR 2SC4178-F14	
< RESISTOR >			
R691	1-216-295-00	METAL CHIP 0 5% 1/10W	
R692	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R693	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	
R693	1-216-840-11	METAL CHIP 39K 5% 1/16W (TR82/TR400/TR550/TR750)	
R694	1-216-819-11	METAL CHIP 680 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	
R694	1-216-820-11	METAL CHIP 820 5% 1/16W (TR82/TR400/TR550/TR750)	
R695	1-216-845-11	METAL CHIP 100K 5% 1/16W (TR82/TR400/TR550/TR750)	

Be sure to read "Note on the CCD Imager replacement" on page 4-6 when changing the CCD imager.

REF	Part No.	Description	Amount	Part No.	Description	Amount
REF	1-100-00-01	WHEEL, CRY	1.00	05	1.00	
REF	1-100-00-02	WHEEL, CRY	1.00	06	1.00	
REF	1-100-00-03	WHEEL, CRY	1.00	07	1.00	
REF	1-100-00-04	WHEEL, CRY	1.00	08	1.00	
REF	1-100-00-05	WHEEL, CRY	1.00	09	1.00	
REF	1-100-00-11	WHEEL, CRY	1.00	10	1.00	
REF	1-100-00-12	WHEEL, CRY	1.00	11	1.00	
REF	1-100-00-13	WHEEL, CRY	1.00	12	1.00	
REF	1-100-00-14	WHEEL, CRY	1.00	13	1.00	
REF	1-100-00-15	WHEEL, CRY	1.00	14	1.00	
REF	1-100-00-16	WHEEL, CRY	1.00	15	1.00	
REF	1-100-00-17	WHEEL, CRY	1.00	16	1.00	
REF	1-100-00-18	WHEEL, CRY	1.00	17	1.00	
REF	1-100-00-19	WHEEL, CRY	1.00	18	1.00	
REF	1-100-00-20	WHEEL, CRY	1.00	19	1.00	
REF	1-100-00-21	WHEEL, CRY	1.00	20	1.00	
REF	1-100-00-22	WHEEL, CRY	1.00	21	1.00	
REF	1-100-00-23	WHEEL, CRY	1.00	22	1.00	
REF	1-100-00-24	WHEEL, CRY	1.00	23	1.00	
REF	1-100-00-25	WHEEL, CRY	1.00	24	1.00	
REF	1-100-00-26	WHEEL, CRY	1.00	25	1.00	
REF	1-100-00-27	WHEEL, CRY	1.00	26	1.00	
REF	1-100-00-28	WHEEL, CRY	1.00	27	1.00	
REF	1-100-00-29	WHEEL, CRY	1.00	28	1.00	
REF	1-100-00-30	WHEEL, CRY	1.00	29	1.00	
REF	1-100-00-31	WHEEL, CRY	1.00	30	1.00	
REF	1-100-00-32	WHEEL, CRY	1.00	31	1.00	
REF	1-100-00-33	WHEEL, CRY	1.00	32	1.00	
REF	1-100-00-34	WHEEL, CRY	1.00	33	1.00	
REF	1-100-00-35	WHEEL, CRY	1.00	34	1.00	
REF	1-100-00-36	WHEEL, CRY	1.00	35	1.00	
REF	1-100-00-37	WHEEL, CRY	1.00	36	1.00	
REF	1-100-00-38	WHEEL, CRY	1.00	37	1.00	
REF	1-100-00-39	WHEEL, CRY	1.00	38	1.00	
REF	1-100-00-40	WHEEL, CRY	1.00	39	1.00	
REF	1-100-00-41	WHEEL, CRY	1.00	40	1.00	
REF	1-100-00-42	WHEEL, CRY	1.00	41	1.00	
REF	1-100-00-43	WHEEL, CRY	1.00	42	1.00	
REF	1-100-00-44	WHEEL, CRY	1.00	43	1.00	
REF	1-100-00-45	WHEEL, CRY	1.00	44	1.00	
REF	1-100-00-46	WHEEL, CRY	1.00	45	1.00	
REF	1-100-00-47	WHEEL, CRY	1.00	46	1.00	
REF	1-100-00-48	WHEEL, CRY	1.00	47	1.00	
REF	1-100-00-49	WHEEL, CRY	1.00	48	1.00	
REF	1-100-00-50	WHEEL, CRY	1.00	49	1.00	
REF	1-100-00-51	WHEEL, CRY	1.00	50	1.00	
REF	1-100-00-52	WHEEL, CRY	1.00	51	1.00	
REF	1-100-00-53	WHEEL, CRY	1.00	52	1.00	
REF	1-100-00-54	WHEEL, CRY	1.00	53	1.00	
REF	1-100-00-55	WHEEL, CRY	1.00	54	1.00	
REF	1-100-00-56	WHEEL, CRY	1.00	55	1.00	
REF	1-100-00-57	WHEEL, CRY	1.00	56	1.00	
REF	1-100-00-58	WHEEL, CRY	1.00	57	1.00	
REF	1-100-00-59	WHEEL, CRY	1.00	58	1.00	
REF	1-100-00-60	WHEEL, CRY	1.00	59	1.00	
REF	1-100-00-61	WHEEL, CRY	1.00	60	1.00	
REF	1-100-00-62	WHEEL, CRY	1.00	61	1.00	
REF	1-100-00-63	WHEEL, CRY	1.00	62	1.00	
REF	1-100-00-64	WHEEL, CRY	1.00	63	1.00	
REF	1-100-00-65	WHEEL, CRY	1.00	64	1.00	
REF	1					

The authors used "Data on the 400 largest companies" on page 4 of their abstract (see EEOC report).

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R695	1-216-849-11	METAL CHIP	220K 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	C1144	1-162-918-11	CERAMIC CHIP	18PF 5% 50V
R696	1-216-809-11	METAL CHIP	100 5% 1/16W	C1146	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
R697	1-216-833-11	METAL CHIP	10K 5% 1/16W	C1150	1-162-913-11	CERAMIC CHIP	8PF 0.5PF 50V
*****				C1151	1-162-917-11	CERAMIC CHIP	15PF 5% 50V
* A-7066-078-A HE-14 BOARD, COMPLETE (TR400/TR750)				C1152	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
*****				C1155	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
(Ref. No. 20,000 Series)				C1156	1-164-360-11	CERAMIC CHIP	0.1uF 16V
< CAPACITOR >				C1157	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C1101	1-162-917-11	CERAMIC CHIP	15PF 5% 50V	C1158	1-162-922-11	CERAMIC CHIP	39PF 5% 50V
C1102	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	C1160	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C1103	1-162-917-11	CERAMIC CHIP	15PF 5% 50V	C1161	1-164-218-11	CERAMIC CHIP	180PF 0.25PF 50V
C1104	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	C1162	1-162-949-11	CERAMIC CHIP	47PF 5% 50V
C1106	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	C1163	1-162-941-11	CERAMIC CHIP	10PF 0.5PF 50V
C1107	1-162-975-11	CERAMIC CHIP	24PF 5% 50V	C1164	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C1108	1-162-923-11	CERAMIC CHIP	47PF 5% 50V	C1165	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
C1109	1-162-928-11	CERAMIC CHIP	120PF 5% 50V	C1166	1-162-957-11	CERAMIC CHIP	220PF 5% 50V
C1110	1-162-910-11	CERAMIC CHIP	5PF 0.25PF 50V	C1167	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C1111	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C1168	1-162-959-11	CERAMIC CHIP	330PF 5% 50V
C1112	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1169	1-164-155-11	CERAMIC CHIP	75PF 5% 50V
C1113	1-164-005-11	CERAMIC CHIP	0.47uF 25V	C1171	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C1114	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1173	1-162-952-11	CERAMIC CHIP	82PF 5% 50V
C1115	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1175	1-162-955-11	CERAMIC CHIP	150PF 5% 50V
C1116	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1176	1-162-949-11	CERAMIC CHIP	47PF 5% 50V
C1117	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1178	1-162-957-11	CERAMIC CHIP	220PF 5% 50V
C1118	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1179	1-162-943-11	CERAMIC CHIP	15PF 5% 50V
C1119	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	C1181	1-164-218-11	CERAMIC CHIP	180PF 0.25PF 50V
C1121	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1182	1-162-955-11	CERAMIC CHIP	150PF 5% 50V
C1122	1-164-218-11	CERAMIC CHIP	180PF 0.25PF 50V	C1183	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C1123	1-164-005-11	CERAMIC CHIP	0.47uF 25V	C1184	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C1124	1-162-925-11	CERAMIC CHIP	68PF 5% 50V	C1185	1-164-149-11	CERAMIC CHIP	36PF 5% 50V
C1125	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1188	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C1126	1-162-925-11	CERAMIC CHIP	68PF 5% 50V	C1189	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C1127	1-162-910-11	CERAMIC CHIP	5PF 0.25PF 50V	C1192	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C1128	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C1193	1-164-218-11	CERAMIC CHIP	180PF 0.25PF 50V
C1129	1-162-925-11	CERAMIC CHIP	68PF 5% 50V	< CONNECTOR >			
C1130	1-162-974-11	CERAMIC CHIP	0.01uF 50V	* CN1101 1-573-341-11 CONNECTOR, BOARD TO BOARD 26P			
C1131	1-162-974-11	CERAMIC CHIP	0.01uF 50V	< DIODE >			
C1132	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	D1101	8-719-404-49	DIODE	MA111
C1133	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	D1102	8-719-027-48	DIODE	MA142WA
C1134	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D1103	8-719-027-48	DIODE	MA142WA
C1135	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	D1105	8-719-404-49	DIODE	MA111
C1136	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	< FILTER >			
C1137	1-162-974-11	CERAMIC CHIP	0.01uF 50V	FL1101	1-236-775-11	FILTER, LOW PASS (DEM)	
C1138	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	FL1102	1-239-112-21	FILTER, LOW PASS (Y)	
C1140	1-162-974-11	CERAMIC CHIP	0.01uF 50V	< IC >			
C1141	1-162-974-11	CERAMIC CHIP	0.01uF 50V	IC1101	8-752-058-02	IC	CXA1509AR
C1142	1-164-392-11	CERAMIC CHIP	390PF 5% 50V				
C1143	1-162-912-11	CERAMIC CHIP	7PF 0.5PF 50V				



# HE-14

Ref. No.	Part No.	Description
IC1102	8-759-070-51	IC SN74HCU04ADB
< COIL >		
L1101	1-412-956-21	INDUCTOR 27uH
L1102	1-412-954-11	INDUCTOR 18uH
L1103	1-412-947-11	INDUCTOR 4.7uH
L1104	1-412-959-11	INDUCTOR 47uH
L1105	1-412-954-11	INDUCTOR 18uH
L1106	1-412-945-11	INDUCTOR 3.3uH
L1108	1-412-954-11	INDUCTOR 18uH
L1109	1-412-948-11	INDUCTOR 5.6uH
L1110	1-412-956-21	INDUCTOR 27uH
L1111	1-410-655-31	INDUCTOR CHIP 120uH
L1112	1-412-058-11	INDUCTOR CHIP 10uH
L1113	1-412-058-11	INDUCTOR CHIP 10uH
L1114	1-412-957-11	INDUCTOR 33uH
L1115	1-412-952-11	INDUCTOR 12uH
L1116	1-412-948-11	INDUCTOR 5.6uH
L1118	1-412-953-11	INDUCTOR 15uH
L1119	1-412-949-21	INDUCTOR 6.8uH
L1121	1-412-947-11	INDUCTOR 4.7uH
L1122	1-412-954-11	INDUCTOR 18uH
L1123	1-412-949-21	INDUCTOR 6.8uH
L1124	1-412-960-21	INDUCTOR 56uH
< TRANSISTOR >		
Q1102	8-729-402-42	TRANSISTOR UN5213
Q1103	8-729-012-50	TRANSISTOR 2SC4400
Q1107	8-729-402-42	TRANSISTOR UN5213
Q1110	8-729-120-28	TRANSISTOR 2SC1623
Q1111	8-729-420-24	TRANSISTOR 2SB1218A
Q1113	8-729-012-50	TRANSISTOR 2SC4400
Q1114	8-729-402-81	TRANSISTOR XN4501
Q1115	8-729-012-50	TRANSISTOR 2SC4400
Q1117	8-729-230-63	TRANSISTOR 2SC4116
Q1118	8-729-230-63	TRANSISTOR 2SC4116
Q1119	8-729-402-42	TRANSISTOR UN5213
Q1120	8-729-403-35	TRANSISTOR UN5113
Q1121	8-729-420-24	TRANSISTOR 2SB1218A
Q1123	8-729-012-50	TRANSISTOR 2SC4400
Q1125	8-729-420-24	TRANSISTOR 2SB1218A
Q1126	8-729-012-50	TRANSISTOR 2SC4400
Q1127	8-729-403-35	TRANSISTOR UN5113
Q1128	8-729-230-63	TRANSISTOR 2SC4116
Q1129	8-729-012-50	TRANSISTOR 2SC4400
Q1131	8-729-824-02	TRANSISTOR 2SA1838
Q1132	8-729-012-50	TRANSISTOR 2SC4400
Q1133	8-729-012-50	TRANSISTOR 2SC4400
Q1134	8-729-402-42	TRANSISTOR UN5213
Q1137	8-729-230-63	TRANSISTOR 2SC4116

Ref. No.	Part No.	Description	Remark
Q1138	8-729-420-24	TRANSISTOR 2SB1218A	
< RESISTOR >			
R1101	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1102	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1103	1-216-820-11	METAL CHIP 820 5%	1/16W
R1104	1-216-819-11	METAL CHIP 680 5%	1/16W
R1105	1-216-817-11	METAL CHIP 470 5%	1/16W
R1106	1-216-809-11	METAL CHIP 100 5%	1/16W
R1107	1-216-815-11	METAL CHIP 330 5%	1/16W
R1108	1-216-813-11	METAL CHIP 220 5%	1/16W
R1109	1-216-813-11	METAL CHIP 220 5%	1/16W
R1111	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1112	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1113	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1114	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1115	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1116	1-216-833-11	METAL CHIP 10K 5%	1/16W
R1118	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1119	1-216-816-11	METAL CHIP 390 5%	1/16W
R1120	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
R1123	1-216-827-11	METAL CHIP 3.3K 5%	1/16W
R1124	1-216-826-11	METAL CHIP 2.7K 5%	1/16W
R1125	1-216-840-11	METAL CHIP 39K 5%	1/16W
R1127	1-216-841-11	METAL CHIP 47K 5%	1/16W
R1128	1-216-833-11	METAL CHIP 10K 5%	1/16W
R1130	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1131	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1132	1-216-820-11	METAL CHIP 820 5%	1/16W
R1134	1-216-820-11	METAL CHIP 820 5%	1/16W
R1135	1-216-814-11	METAL CHIP 270 5%	1/16W
R1136	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1138	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1139	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1148	1-216-837-11	METAL CHIP 22K 5%	1/16W
R1149	1-216-838-11	METAL CHIP 27K 5%	1/16W
R1151	1-216-826-11	METAL CHIP 2.7K 5%	1/16W
R1152	1-216-833-11	METAL CHIP 10K 5%	1/16W
R1153	1-216-818-11	METAL CHIP 560 5%	1/16W
R1154	1-216-821-11	METAL CHIP 1K 5%	1/16W
R1155	1-216-817-11	METAL CHIP 470 5%	1/16W
R1156	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1157	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1158	1-216-825-11	METAL CHIP 2.2K 5%	1/16W
R1159	1-216-829-11	METAL CHIP 4.7K 5%	1/16W
R1160	1-216-820-11	METAL CHIP 820 5%	1/16W
R1161	1-216-819-11	METAL CHIP 680 5%	1/16W
R1162	1-216-845-11	METAL CHIP 100K 5%	1/16W
R1163	1-216-817-11	METAL CHIP 470 5%	1/16W
R1164	1-216-829-11	METAL CHIP 4.7K 5%	1/16W





**HE-14****LB-35****LS-33****MA-179**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R1165	1-216-814-11	METAL CHIP	270 5% 1/16W	*	A-7056-012-A	LB-35 BOARD, COMPLETE (TR70/80)	
R1166	1-216-815-11	METAL CHIP	330 5% 1/16W			*****	
R1167	1-216-864-11	METAL CHIP	0 5% 1/16W			(Ref. No. 4,000 Series)	
R1168	1-216-826-11	METAL CHIP	2.7K 5% 1/16W			< CONNECTOR >	
R1169	1-216-836-11	METAL CHIP	18K 5% 1/16W				
R1170	1-216-839-11	METAL CHIP	33K 5% 1/16W	CN801	1-573-812-11	CONNECTOR, BOARD TO BOARD 12P	
R1171	1-216-842-11	METAL CHIP	56K 5% 1/16W			< DIODE >	
R1172	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R1173	1-216-837-11	METAL CHIP	22K 5% 1/16W	D801	8-719-037-83	DIODE LN1371G-(TR)	
R1174	1-216-813-11	METAL CHIP	220 5% 1/16W			*****	
R1175	1-216-813-11	METAL CHIP	220 5% 1/16W			LS-33 BOARD	
R1176	1-216-821-11	METAL CHIP	1K 5% 1/16W			*****	
R1177	1-216-814-11	METAL CHIP	270 5% 1/16W			< DIODE >	
R1178	1-216-828-11	METAL CHIP	3.9K 5% 1/16W				
R1179	1-216-833-11	METAL CHIP	10K 5% 1/16W	D001	8-719-989-52	DIODE GL4600S	
R1180	1-216-864-11	METAL CHIP	0 5% 1/16W			< HALL >	
R1182	1-216-825-11	METAL CHIP	2.2K 5% 1/16W				
R1183	1-216-811-11	METAL CHIP	150 5% 1/16W	H001	8-719-987-62	DIODE LT140SAZ	
R1184	1-216-819-11	METAL CHIP	680 5% 1/16W	H002	8-719-987-62	DIODE LT140SAZ	
R1186	1-216-817-11	METAL CHIP	470 5% 1/16W			< TRANSISTOR >	
R1187	1-216-815-11	METAL CHIP	330 5% 1/16W				
R1188	1-216-820-11	METAL CHIP	820 5% 1/16W	Q001	8-729-012-46	TRANSISTOR PT4600FS	
R1189	1-216-864-11	METAL CHIP	0 5% 1/16W	Q002	8-729-012-46	TRANSISTOR PT4600FS	
R1190	1-216-816-11	METAL CHIP	390 5% 1/16W			< RESISTOR >	
R1191	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R1194	1-216-819-11	METAL CHIP	680 5% 1/16W	R003	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1196	1-216-833-11	METAL CHIP	10K 5% 1/16W	R004	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1197	1-216-833-11	METAL CHIP	10K 5% 1/16W	R010	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1198	1-216-819-11	METAL CHIP	680 5% 1/16W	R011	1-216-033-00	METAL CHIP 220 5% 1/10W	
R1199	1-216-819-11	METAL CHIP	680 5% 1/16W			< SWITCH >	
R1202	1-216-811-11	METAL CHIP	150 5% 1/16W				
R1203	1-216-833-11	METAL CHIP	10K 5% 1/16W	S002	1-572-987-11	SWITCH, PUSH (3 KEY)	
R1204	1-216-815-11	METAL CHIP	330 5% 1/16W			*****	
R1205	1-216-817-11	METAL CHIP	470 5% 1/16W	*	A-7063-962-A	MA-179 BOARD, COMPLETE	
R1206	1-216-817-11	METAL CHIP	470 5% 1/16W			*****	
R1207	1-216-815-11	METAL CHIP	330 5% 1/16W			(TR72/TR80/TR400/TR430/TR750)	
R1209	1-216-864-11	METAL CHIP	0 5% 1/16W			(Ref. No. 7,000 Series)	
R1210	1-216-831-11	METAL CHIP	6.8K 5% 1/16W			< CAPACITOR >	
R1214	1-216-820-11	METAL CHIP	820 5% 1/16W				
R1215	1-216-819-11	METAL CHIP	680 5% 1/16W	C001	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	
R1216	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	C003	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
R1217	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	C005	1-163-023-00	CERAMIC CHIP 0.015uF 5% 50V	
R1218	1-216-817-11	METAL CHIP	470 5% 1/16W	C006	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
R1219	1-216-817-11	METAL CHIP	470 5% 1/16W	C007	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
R1220	1-216-864-11	METAL CHIP	0 5% 1/16W	C008	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
R1221	1-216-864-11	METAL CHIP	0 5% 1/16W	C009	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
R1223	1-216-864-11	METAL CHIP	0 5% 1/16W	C010	1-135-091-21	TANTAL. CHIP 1uF 20% 16V	
R1226	1-216-864-11	METAL CHIP	0 5% 1/16W				
*****							

Part No.	Part No.	Description	QTY	UNIT	PRICE
1-100-01-1	1-100-01-1	1-100-01-1	1	EA	1.00
1-100-01-2	1-100-01-2	1-100-01-2	1	EA	1.00
1-100-01-3	1-100-01-3	1-100-01-3	1	EA	1.00
1-100-01-4	1-100-01-4	1-100-01-4	1	EA	1.00
1-100-01-5	1-100-01-5	1-100-01-5	1	EA	1.00
1-100-01-6	1-100-01-6	1-100-01-6	1	EA	1.00
1-100-01-7	1-100-01-7	1-100-01-7	1	EA	1.00
1-100-01-8	1-100-01-8	1-100-01-8	1	EA	1.00
1-100-01-9	1-100-01-9	1-100-01-9	1	EA	1.00
1-100-01-10	1-100-01-10	1-100-01-10	1	EA	1.00
1-100-01-11	1-100-01-11	1-100-01-11	1	EA	1.00
1-100-01-12	1-100-01-12	1-100-01-12	1	EA	1.00
1-100-01-13	1-100-01-13	1-100-01-13	1	EA	1.00
1-100-01-14	1-100-01-14	1-100-01-14	1	EA	1.00
1-100-01-15	1-100-01-15	1-100-01-15	1	EA	1.00
1-100-01-16	1-100-01-16	1-100-01-16	1	EA	1.00
1-100-01-17	1-100-01-17	1-100-01-17	1	EA	1.00
1-100-01-18	1-100-01-18	1-100-01-18	1	EA	1.00
1-100-01-19	1-100-01-19	1-100-01-19	1	EA	1.00
1-100-01-20	1-100-01-20	1-100-01-20	1	EA	1.00
1-100-01-21	1-100-01-21	1-100-01-21	1	EA	1.00
1-100-01-22	1-100-01-22	1-100-01-22	1	EA	1.00
1-100-01-23	1-100-01-23	1-100-01-23	1	EA	1.00
1-100-01-24	1-100-01-24	1-100-01-24	1	EA	1.00
1-100-01-25	1-100-01-25	1-100-01-25	1	EA	1.00
1-100-01-26	1-100-01-26	1-100-01-26	1	EA	1.00
1-100-01-27	1-100-01-27	1-100-01-27	1	EA	1.00
1-100-01-28	1-100-01-28	1-100-01-28	1	EA	1.00
1-100-01-29	1-100-01-29	1-100-01-29	1	EA	1.00
1-100-01-30	1-100-01-30	1-100-01-30	1	EA	1.00
1-100-01-31	1-100-01-31	1-100-01-31	1	EA	1.00
1-100-01-32	1-100-01-32	1-100-01-32	1	EA	1.00
1-100-01-33	1-100-01-33	1-100-01-33	1	EA	1.00
1-100-01-34	1-100-01-34	1-100-01-34	1	EA	1.00
1-100-01-35	1-100-01-35	1-100-01-35	1	EA	1.00
1-100-01-36	1-100-01-36	1-100-01-36	1	EA	1.00
1-100-01-37	1-100-01-37	1-100-01-37	1	EA	1.00
1-100-01-38	1-100-01-38	1-100-01-38	1	EA	1.00
1-100-01-39	1-100-01-39	1-100-01-39	1	EA	1.00
1-100-01-40	1-100-01-40	1-100-01-40	1	EA	1.00
1-100-01-41	1-100-01-41	1-100-01-41	1	EA	1.00
1-100-01-42	1-100-01-42	1-100-01-42	1	EA	1.00
1-100-01-43	1-100-01-43	1-100-01-43	1	EA	1.00
1-100-01-44	1-100-01-44	1-100-01-44	1	EA	1.00
1-100-01-45	1-100-01-45	1-100-01-45	1	EA	1.00
1-100-01-46	1-100-01-46	1-100-01-46	1	EA	1.00
1-100-01-47	1-100-01-47	1-100-01-47	1	EA	1.00
1-100-01-48	1-100-01-48	1-100-01-48	1	EA	1.00
1-100-01-49	1-100-01-49	1-100-01-49	1	EA	1.00
1-100-01-50	1-100-01-50	1-100-01-50	1	EA	1.00
1-100-01-51	1-100-01-51	1-100-01-51	1	EA	1.00
1-100-01-52	1-100-01-52	1-100-01-52	1	EA	1.00
1-100-01-53	1-100-01-53	1-100-01-53	1	EA	1.00
1-100-01-54	1-100-01-54	1-100-01-54	1	EA	1.00
1-100-01-55	1-100-01-55	1-100-01-55	1	EA	1.00
1-100-01-56	1-100-01-56	1-100-01-56	1	EA	1.00
1-100-01-57	1-100-01-57	1-100-01-57	1	EA	1.00
1-100-01-58	1-100-01-58	1-100-01-58	1	EA	1.00
1-100-01-59	1-100-01-59	1-100-01-59	1	EA	1.00
1-100-01-60	1-100-01-60	1-100-01-60	1	EA	1.00
1-100-01-61	1-100-01-61	1-100-01-61	1	EA	1.00
1-100-01-62	1-100-01-62	1-100-01-62	1	EA	1.00
1-100-01-63	1-100-01-63	1-100-01-63	1	EA	1.00
1-100-01-64	1-100-01-64	1-100-01-64	1	EA	1.00
1-100-01-65	1-100-01-65	1-100-01-65	1	EA	1.00
1-100-01-66	1-100-01-66	1-100-01-66	1	EA	1.00
1-100-01-67	1-100-01-67	1-100-01-67	1	EA	1.00
1-100-01-68	1-100-01-68	1-100-01-68	1	EA	1.00
1-100-01-69	1-100-01-69	1-100-01-69	1	EA	1.00
1-100-01-70	1-100-01-70	1-100-01-70	1	EA	1.00
1-100-01-71	1-100-01-71	1-100-01-71	1	EA	1.00
1-100-01-72	1-100-01-72	1-100-01-72	1	EA	1.00
1-100-01-73	1-100-01-73	1-100-01-73	1	EA	1.00
1-100-01-74	1-100-01-74	1-100-01-74	1	EA	1.00
1-100-01-75	1-100-01-75	1-100-01-75	1	EA	1.00
1-100-01-76	1-100-01-76	1-100-01-76	1	EA	1.00
1-100-01-77	1-100-01-77	1-100-01-77	1	EA	1.00
1-100-01-78	1-100-01-78	1-100-01-78	1	EA	1.00
1-100-01-79	1-100-01-79	1-100-01-79	1	EA	1.00
1-100-01-80	1-100-01-80	1-100-01-80	1	EA	1.00
1-100-01-81	1-100-01-81	1-100-01-81	1	EA	1.00
1-100-01-82	1-100-01-82	1-100-01-82	1	EA	1.00
1-100-01-83	1-100-01-83	1-100-01-83	1	EA	1.00
1-100-01-84	1-100-01-84	1-100-01-84	1	EA	1.00
1-100-01-85	1-100-01-85	1-100-01-85	1	EA	1.00
1-100-01-86	1-100-01-86	1-100-01-86	1	EA	1.00
1-100-01-87	1-100-01-87	1-100-01-87	1	EA	1.00
1-100-01-88	1-100-01-88	1-100-01-88	1	EA	1.00
1-100-01-89	1-100-01-89	1-100-01-89	1	EA	1.00
1-100-01-90	1-100-01-90	1-100-01-90	1	EA	1.00
1-100-01-91	1-100-01-91	1-100-01-91	1	EA	1.00
1-100-01-92	1-100-01-92	1-100-01-92	1	EA	1.00
1-100-01-93	1-100-01-93	1-100-01-93	1	EA	1.00
1-100-01-94	1-100-01-94	1-100-01-94	1	EA	1.00
1-100-01-95	1-100-01-95	1-100-01-95	1	EA	1.00
1-100-01-96	1-100-01-96	1-100-01-96	1	EA	1.00
1-100-01-97	1-100-01-97	1-100-01-97	1	EA	1.00
1-100-01-98	1-100-01-98	1-100-01-98	1	EA	1.00
1-100-01-99	1-100-01-99	1-100-01-99	1	EA	1.00
1-100-01-100	1-100-01-100	1-100-01-100	1	EA	1.00

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C011	1-164-232-11	CERAMIC CHIP	0.01uF 50V	R008	1-216-834-11	METAL CHIP	12K 5% 1/16W
C012	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R009	1-216-835-11	METAL CHIP	15K 5% 1/16W
C013	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	R010	1-216-833-11	METAL CHIP	10K 5% 1/16W
C014	1-162-953-11	CERAMIC CHIP	100PF 5% 50V	R011	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
C015	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	R012	1-216-839-11	METAL CHIP	33K 5% 1/16W
C019	1-164-232-11	CERAMIC CHIP	0.01uF 50V	R013	1-216-831-11	METAL CHIP	6.8K 5% 1/16W
C020	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R014	1-216-831-11	METAL CHIP	6.8K 5% 1/16W
C021	1-126-205-11	ELECT CHIP	47uF 20% 6.3V	R015	1-216-839-11	METAL CHIP	33K 5% 1/16W
C022	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	R016	1-216-833-11	METAL CHIP	10K 5% 1/16W
C023	1-135-091-21	TANTAL. CHIP	1uF 20% 16V	R017	1-216-835-11	METAL CHIP	15K 5% 1/16W
C024	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R018	1-216-834-11	METAL CHIP	12K 5% 1/16W
C025	1-163-023-00	CERAMIC CHIP	0.015uF 5% 50V	R019	1-216-834-11	METAL CHIP	12K 5% 1/16W
C026	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R020	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
C027	1-163-037-11	CERAMIC CHIP	0.022uF 10% 25V	R022	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
C030	1-164-343-11	CERAMIC CHIP	0.056uF 10% 25V	R023	1-216-833-11	METAL CHIP	10K 5% 1/16W
C043	1-128-004-11	ELECT CHIP	10uF 20% 16V	R024	1-216-821-11	METAL CHIP	1K 5% 1/16W
< CONNECTOR >				R025	1-216-864-11	METAL CHIP	0 5% 1/16W
CN001	1-691-490-21	CONNECTOR, FFC/FPC 11P		R027	1-216-864-11	METAL CHIP	0 5% 1/16W
CN002	1-580-057-11	PIN, CONNECTOR 4P		R036	1-216-864-11	METAL CHIP	0 5% 1/16W
CN003	1-580-057-11	PIN, CONNECTOR 4P		R037	1-216-839-11	METAL CHIP	33K 5% 1/16W
< DIODE >				R039	1-216-824-11	METAL CHIP	1.8K 5% 1/16W
D001	8-719-404-46	DIODE MA110		R043	1-216-815-11	METAL CHIP	330 5% 1/16W
D002	8-719-404-46	DIODE MA110		*****			
D004	8-719-404-19	DIODE LN1251C (TALLY)		* A-7063-956-A MA-199 BOARD, COMPLETE			
< IC >				*****			
IC001	8-759-084-53	IC CXA1618AN-E2		(TR42/TR70/TR82/TR550)			
IC002	8-749-923-29	IC RS-20E-T		(Ref. No. 5,000 Series)			
< JACK >				< CAPACITOR >			
J001	1-691-737-11	JACK (SMALL TYPE)(EXT MIC)		C014	1-162-953-11	CERAMIC CHIP	100PF 5% 50V
< COIL >				C015	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V
L001	1-412-939-11	INDUCTOR 1uH		C032	1-164-346-11	CERAMIC CHIP	1uF 16V
L002	1-412-939-11	INDUCTOR 1uH		C033	1-162-953-11	CERAMIC CHIP	100PF 5% 50V
L003	1-412-939-11	INDUCTOR 1uH		C034	1-162-974-11	CERAMIC CHIP	0.01uF 50V
< TRANSISTOR >				C035	1-162-587-11	CERAMIC CHIP	0.039uF 10% 25V
Q001	8-729-230-63	TRANSISTOR 2SC4116-YG		C036	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V
Q003	8-729-402-42	TRANSISTOR UN5213		C037	1-164-346-11	CERAMIC CHIP	1uF 16V
< RESISTOR >				C040	1-126-205-11	ELECT CHIP	47uF 20% 6.3V
R003	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	C041	1-164-345-11	CERAMIC CHIP	0.082uF 10% 25V
R004	1-216-833-11	METAL CHIP	10K 5% 1/16W	C043	1-128-004-11	ELECT CHIP	10uF 20% 16V
R005	1-216-821-11	METAL CHIP	1K 5% 1/16W	< CONNECTOR >			
R006	1-216-813-11	METAL CHIP	220 5% 1/16W	CN001	1-691-487-21	CONNECTOR, FFC/FPC 8P	
R007	1-216-834-11	METAL CHIP	12K 5% 1/16W	CN003	1-580-057-11	PIN, CONNECTOR 4P	
< DIODE >				< DIODE >			
D001	8-719-404-49	DIODE MA111		D001	8-719-404-49	DIODE MA111	
D002	8-719-404-49	DIODE MA111		D002	8-719-404-49	DIODE MA111	
D004	8-719-404-19	DIODE LN1251C (TALLY)		D004	8-719-404-19	DIODE LN1251C (TALLY)	



Ref. No.	Part No.	Description	Remark
< IC >			
IC002	8-749-923-29	IC RS-20ET	
IC003	8-759-822-37	IC LA7293M-TE	
< COIL >			
L002	1-412-939-11	INDUCTOR 1uH	
L003	1-412-939-11	INDUCTOR 1uH	
< JACK >			
J001	1-568-027-11	JACK, SMALL TYPE 1P (EXT MIC)	
< TRANSISTOR >			
Q002	8-729-402-63	TRANSISTOR 2SB1218A-Q	
< RESISTOR >			
R027	1-216-864-11	METAL CHIP 0 5% 1/16W	
R028	1-216-820-11	METAL CHIP 820 5% 1/16W	
R029	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R030	1-216-830-11	METAL CHIP 5.6K 5% 1/16W	
R031	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R032	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R033	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R043	1-216-815-11	METAL CHIP 330 5% 1/16W	
R044	1-216-853-11	METAL CHIP 470K 5% 1/16W	
*****			
* A-7072-000-A SL-38 BOARD, COMPLETE			
*****			
(Ref. No. 4,000 Series)			
< CAPACITOR >			
C543	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C544	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C545	1-135-211-11	TANTAL. CHIP 6.8uF 20% 6.3V	
C546	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C547	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C551	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C553	1-164-361-11	CERAMIC CHIP 0.047uF 16V	
C554	1-135-215-21	TANTAL. CHIP 6.8uF 20% 16V	
C555	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C556	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C557	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C558	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
< CONNECTOR >			
CN500	1-691-473-21	CONNECTOR, FFC/FPC 7P	
CN501	1-691-472-21	CONNECTOR, FFC/FPC 6P	
CN502	1-691-482-21	CONNECTOR, FFC/FPC 15P	

Ref. No.	Part No.	Description	Remark
< IC >			
IC507	8-759-165-47	IC MPC1780VFUEB	
< COIL >			
L505	1-414-078-11	INDUCTOR 10uH	
< TRANSISTOR >			
Q560	8-729-805-25	TRANSISTOR 2SB1121	
Q561	8-729-425-50	TRANSISTOR 2SB1462Q	
Q562	8-729-402-81	TRANSISTOR XN4501	
< RESISTOR >			
R562	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R563	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R564	1-216-864-11	METAL CHIP 0 5% 1/16W	
R565	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R566	1-218-857-11	METAL CHIP 2.7K 0.50% 1/16W	
R567	1-216-295-00	METAL CHIP 0 5% 1/10W	
R568	1-216-168-00	METAL GLAZE 56 5% 1/8W	
R569	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R570	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R571	1-218-879-11	METAL CHIP 22K 0.50% 1/16W	
R572	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R590	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R591	1-216-832-11	METAL CHIP 8.2K 5% 1/16W	
< FLEXIBLE BOARD >			
W500	1-651-889-11	FP-48 FLEXIBLE BOARD	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD	

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## VC-138

## VC-145

Ref.No.	Part No.	Description	Remark
*	A-7063-961-A	VC-138 BOARD, COMPLETE (TR72/430) *****	
*	A-7066-018-A	VC-138 BOARD, COMPLETE (TR80) *****	
*	A-7066-080-A	VC-138 BOARD, COMPLETE (TR400/TR750) *****	
*	A-7063-955-A	VC-145 BOARD, COMPLETE (TR82) *****	
*	A-7066-007-A	VC-145 BOARD, COMPLETE (TR70) *****	
*	A-7066-084-A	VC-145 BOARD, COMPLETE (TR42) *****	
*	A-7066-088-A	VC-145 BOARD, COMPLETE (TR550) ***** (Ref. No. 1,000 Series)	
< CAPACITOR >			
C604	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C605	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C606	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C607	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C608	1-104-847-11	TANTAL. CHIP 22uF 20%	4V (TR42/TR72/TR82/TR430/TR550)
C609	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C610	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C611	1-164-360-11	CERAMIC CHIP 0.1uF	16V (TR42/TR72/TR82/TR430/TR550)
C613	1-162-974-11	CERAMIC CHIP 0.01uF	50V (TR42/TR72/TR82/TR430/TR550)
C614	1-162-974-11	CERAMIC CHIP 0.01uF	50V (TR42/TR72/TR82/TR430/TR550)
C616	1-135-091-21	TANTAL. CHIP 1uF 20%	16V
C617	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
C618	1-165-176-11	CERAMIC CHIP 0.047uF 10%	16V
C619	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C620	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C621	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C622	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C623	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C624	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C627	1-162-946-11	CERAMIC CHIP 27PF 5%	50V
C628	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C629	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C630	1-162-946-11	CERAMIC CHIP 27PF 5%	50V
C631	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C632	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C633	1-162-946-11	CERAMIC CHIP 27PF 5%	50V (TR82/TR400/TR550/TR750)

Ref.No.	Part No.	Description	Remark
C633	1-162-947-11	CERAMIC CHIP 33PF 5%	50V (TR42/TR70/TR72/TR80/TR430)
C634	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C635	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V (TR82/TR400/TR550/TR750)
C636	1-164-360-11	CERAMIC CHIP 0.1uF	16V (TR82/TR400/TR550/TR750)
C637	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C638	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C639	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C699	1-162-954-11	CERAMIC CHIP 120PF 5%	50V (TR82/TR400/TR550/TR750)
C701	1-163-059-91	CERAMIC CHIP 0.01uF 10%	50V
C702	1-162-638-11	CERAMIC CHIP 1uF	16V
C703	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C704	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C705	1-135-145-11	TANTALUM CHIP 0.47uF 10%	35V
C706	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C708	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C709	1-135-214-21	TANTAL. CHIP 4.7uF 20%	20V
C710	1-162-971-11	CERAMIC CHIP 0.001uF	50V
C711	1-162-971-11	CERAMIC CHIP 0.001uF	50V
C712	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C713	1-107-685-11	TANTAL. CHIP 15uF 20%	6.3V
C714	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C715	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C716	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C717	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C718	1-162-637-11	CERAMIC CHIP 0.47uF	16V
C719	1-162-971-11	CERAMIC CHIP 0.001uF	50V
C720	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C721	1-162-916-11	CERAMIC CHIP 12PF 5%	50V
C722	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C724	1-162-925-11	CERAMIC CHIP 68PF 5%	50V (TR42/TR70/TR72/TR80/TR430)
C724	1-162-949-11	CERAMIC CHIP 47PF 5%	50V (TR82/TR400/TR550/TR750)
C725	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C726	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
C727	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C728	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C729	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C730	1-163-077-00	CERAMIC CHIP 0.1uF 10%	25V (TR82/TR400/TR550/TR750)
C730	1-164-298-11	CERAMIC CHIP 0.15uF 10%	25V (TR42/TR70/TR72/TR80/TR430)
C731	1-135-091-21	TANTAL. CHIP 1uF 20%	16V
C732	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C733	1-135-181-21	TANTALUM CHIP 4.7uF 20%	6.3V
C734	1-135-091-21	TANTAL. CHIP 1uF 20%	16V
C735	1-162-974-11	CERAMIC CHIP 0.01uF	50V
C737	1-162-946-11	CERAMIC CHIP 27PF 5%	50V





Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C739	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	C789	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V (TR82/TR400/TR550/TR750)
C741	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	C790	1-164-299-11	CERAMIC CHIP	0.22uF 10% 25V (TR82/TR400/TR550/TR750)
C742	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C793	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)
C743	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C794	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR82/TR400/TR550/TR750)
C744	1-162-974-11	CERAMIC CHIP	0.01uF 50V	< CONNECTOR >			
C745	1-162-974-11	CERAMIC CHIP	0.01uF 50V	* CN601	1-764-395-21	CONNECTOR, BOARD TO BOARD 42P	
C746	1-164-360-11	CERAMIC CHIP	0.1uF 16V	CN701	1-750-630-11	CONNECTOR, FFC/FPC (ZIF) 16P	
C747	1-164-360-11	CERAMIC CHIP	0.1uF 16V	* CN751	1-764-528-11	CONNECTOR, FFC/FPC (ZIF) 21P	
C748	1-164-360-11	CERAMIC CHIP	0.1uF 16V	CN775	1-691-487-21	CONNECTOR, FFC/FPC 8P	(TR82/TR400/TR550/TR750)
C749	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	< TRIMMER >			
C750	1-162-971-11	CERAMIC CHIP	0.001uF 50V	CT701	1-141-356-11	CAP, ADJ	
C751	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V	< DIODE >			
C752	1-162-971-11	CERAMIC CHIP	0.001uF 50V	D701	8-719-404-49	DIODE MA111	
C753	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D702	8-719-404-49	DIODE MA111	
C754	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D703	8-719-404-49	DIODE MA111	
C755	1-162-974-11	CERAMIC CHIP	0.01uF 50V	D705	8-719-404-49	DIODE MA111	
C756	1-104-752-11	TANTAL. CHIP	33uF 20% 6.3V	< FILTER >			
C757	1-162-974-11	CERAMIC CHIP	0.01uF 50V	FL601	1-239-352-11	FILTER, LOW PASS	(TR82/TR400/TR550/TR750)
C771	1-164-245-11	CERAMIC CHIP	0.015uF 10% 25V (TR82/TR400/TR550/TR750)	FL601	1-239-766-11	FILTER, LOW PASS	(TR42/TR70/TR72/TR80/TR430)
C772	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V (TR82/TR400/TR550/TR750)	< IC >			
C773	1-164-299-11	CERAMIC CHIP	0.22uF 10% 25V (TR82/TR400/TR550/TR750)	IC601	8-759-044-78	IC AK6420F-E1	
C774	1-128-257-21	ELECT CHIP	33uF 20% 10V (TR82/TR400/TR550/TR750)	IC602	8-759-260-67	IC SC424608MC68HC11MA8FU	(TR42/TR70/TR72/TR80/TR82/TR430)
C775	1-128-257-21	ELECT CHIP	33uF 20% 10V (TR82/TR400/TR550/TR750)	IC602	8-759-277-18	IC SC424609MC68HC11MA8FU	(TR400/TR550/TR750)
C776	1-162-953-11	CERAMIC CHIP	100PF 5% 50V (TR82/TR400/TR550/TR750)	IC603	8-759-064-36	IC MB88346BPV	
C777	1-162-568-11	CERAMIC CHIP	0.33uF 10% 16V (TR82/TR400/TR550/TR750)	IC604	8-759-710-29	IC NJM2235M	(TR42/TR72/TR82/TR430/TR550)
C778	1-162-953-11	CERAMIC CHIP	100PF 5% 50V (TR82/TR400/TR550/TR750)	IC609	8-752-365-71	IC CXD2150R	(TR42/TR70/TR72/TR80/TR82/TR430)
C779	1-162-568-11	CERAMIC CHIP	0.33uF 10% 16V (TR82/TR400/TR550/TR750)	IC609	8-752-369-24	IC CXD2150AR	(TR400/TR550/TR750)
C780	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR82/TR400/TR550/TR750)	IC610	8-752-365-72	IC CXD2151R	
C781	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR82/TR400/TR550/TR750)	IC611	8-759-262-36	IC CXD2133BR	
C782	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)	IC613	8-759-247-06	IC CXD2152REL	(TR82/TR400/TR550/TR750)
C783	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)	IC614	8-759-255-09	IC uPD6461GS-802-GLG-E2	
C784	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR82/TR400/TR550/TR750)	IC701	8-752-355-07	IC CXD1267N	
C785	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR82/TR400/TR550/TR750)	IC702	8-752-365-73	IC CXD2405R	(TR82/TR400/TR550/TR750)
C786	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR82/TR400/TR550/TR750)	IC702	8-752-365-74	IC CXD1266R	(TR42/TR70/TR72/TR80/TR430)
C788	1-164-004-11	CERAMIC CHIP	0.1uF 10% 25V (TR82/TR400/TR550/TR750)	IC703	8-752-069-21	IC CXA1690Q	
				IC704	8-759-173-24	IC AD875JST-REEL	(TR70/TR72/TR80/TR430)

Ref. No.	Part No.	Description	Amount	Ref. No.	Part No.	Description	Amount
700	1-00-00-01	CRANK SHP	4.50	80	1.0		
701	1-00-00-01	CRANK SHP	4.50	80	1.0		
702	1-00-00-01	CRANK SHP	4.50	80	1.0		
703	1-00-00-01	CRANK SHP	4.50	80	1.0		
704	1-00-00-01	CRANK SHP	4.50	80	1.0		
705	1-00-00-01	CRANK SHP	4.50	80	1.0		
706	1-00-00-01	CRANK SHP	4.50	80	1.0		
707	1-00-00-01	CRANK SHP	4.50	80	1.0		
708	1-00-00-01	CRANK SHP	4.50	80	1.0		
709	1-00-00-01	CRANK SHP	4.50	80	1.0		
710	1-00-00-01	CRANK SHP	4.50	80	1.0		
711	1-00-00-01	CRANK SHP	4.50	80	1.0		
712	1-00-00-01	CRANK SHP	4.50	80	1.0		
713	1-00-00-01	CRANK SHP	4.50	80	1.0		
714	1-00-00-01	CRANK SHP	4.50	80	1.0		
715	1-00-00-01	CRANK SHP	4.50	80	1.0		
716	1-00-00-01	CRANK SHP	4.50	80	1.0		
717	1-00-00-01	CRANK SHP	4.50	80	1.0		
718	1-00-00-01	CRANK SHP	4.50	80	1.0		
719	1-00-00-01	CRANK SHP	4.50	80	1.0		
720	1-00-00-01	CRANK SHP	4.50	80	1.0		
721	1-00-00-01	CRANK SHP	4.50	80	1.0		
722	1-00-00-01	CRANK SHP	4.50	80	1.0		
723	1-00-00-01	CRANK SHP	4.50	80	1.0		
724	1-00-00-01	CRANK SHP	4.50	80	1.0		
725	1-00-00-01	CRANK SHP	4.50	80	1.0		
726	1-00-00-01	CRANK SHP	4.50	80	1.0		
727	1-00-00-01	CRANK SHP	4.50	80	1.0		
728	1-00-00-01	CRANK SHP	4.50	80	1.0		
729	1-00-00-01	CRANK SHP	4.50	80	1.0		
730	1-00-00-01	CRANK SHP	4.50	80	1.0		
731	1-00-00-01	CRANK SHP	4.50	80	1.0		
732	1-00-00-01	CRANK SHP	4.50	80	1.0		
733	1-00-00-01	CRANK SHP	4.50	80	1.0		
734	1-00-00-01	CRANK SHP	4.50	80	1.0		
735	1-00-00-01	CRANK SHP	4.50	80	1.0		
736	1-00-00-01	CRANK SHP	4.50	80	1.0		
737	1-00-00-01	CRANK SHP	4.50	80	1.0		
738	1-00-00-01	CRANK SHP	4.50	80	1.0		
739	1-00-00-01	CRANK SHP	4.50	80	1.0		
740	1-00-00-01	CRANK SHP	4.50	80	1.0		
741	1-00-00-01	CRANK SHP	4.50	80	1.0		
742	1-00-00-01	CRANK SHP	4.50	80	1.0		
743	1-00-00-01	CRANK SHP	4.50	80	1.0		
744	1-00-00-01	CRANK SHP	4.50	80	1.0		
745	1-00-00-01	CRANK SHP	4.50	80	1.0		
746	1-00-00-01	CRANK SHP	4.50	80	1.0		
747	1-00-00-01	CRANK SHP	4.50	80	1.0		
748	1-00-00-01	CRANK SHP	4.50	80	1.0		
749	1-00-00-01	CRANK SHP	4.50	80	1.0		
750	1-00-00-01	CRANK SHP	4.50	80	1.0		
751	1-00-00-01	CRANK SHP	4.50	80	1.0		
752	1-00-00-01	CRANK SHP	4.50	80	1.0		
753	1-00-00-01	CRANK SHP	4.50	80	1.0		
754	1-00-00-01	CRANK SHP	4.50	80	1.0		
755	1-00-00-01	CRANK SHP	4.50	80	1.0		
756	1-00-00-01	CRANK SHP	4.50	80	1.0		
757	1-00-00-01	CRANK SHP	4.50	80	1.0		
758	1-00-00-01	CRANK SHP	4.50	80	1.0		
759	1-00-00-01	CRANK SHP	4.50	80	1.0		
760	1-00-00-01	CRANK SHP	4.50	80	1.0		
761	1-00-00-01	CRANK SHP	4.50	80	1.0		
762	1-00-00-01	CRANK SHP	4.50	80	1.0		
763	1-00-00-01	CRANK SHP	4.50	80	1.0		
764	1-00-00-01	CRANK SHP	4.50	80	1.0		
765	1-00-00-01	CRANK SHP	4.50	80	1.0		
766	1-00-00-01	CRANK SHP	4.50	80	1.0		
767	1-00-00-01	CRANK SHP	4.50	80	1.0		
768	1-00-00-01	CRANK SHP	4.50	80	1.0		
769	1-00-00-01	CRANK SHP	4.50	80	1.0		
770	1-00-00-01	CRANK SHP	4.50	80	1.0		
771	1-00-00-01	CRANK SHP	4.50	80	1.0		
772	1-00-00-01	CRANK SHP	4.50	80	1.0		
773	1-00-00-01	CRANK SHP	4.50	80	1.0		
774	1-00-00-01	CRANK SHP	4.50	80	1.0		
775	1-00-00-01	CRANK SHP	4.50	80	1.0		
776	1-00-00-01	CRANK SHP	4.50	80	1.0		
777	1-00-00-01	CRANK SHP	4.50	80	1.0		
778	1-00-00-01	CRANK SHP	4.50	80	1.0		
779	1-00-00-01	CRANK SHP	4.50	80	1.0		
780	1-00-00-01	CRANK SHP	4.50	80	1.0		
781	1-00-00-01	CRANK SHP	4.50	80	1.0		
782	1-00-00-01	CRANK SHP	4.50	80	1.0		
783	1-00-00-01	CRANK SHP	4.50	80	1.0		
784	1-00-00-01	CRANK SHP	4.50	80	1.0		
785	1-00-00-01	CRANK SHP	4.50	80	1.0		
786	1-00-00-01	CRANK SHP	4.50	80	1.0		
787	1-00-00-01	CRANK SHP	4.50	80	1.0		
788	1-00-00-01	CRANK SHP	4.50	80	1.0		
789	1-00-00-01	CRANK SHP	4.50	80	1.0		
790	1-00-00-01	CRANK SHP	4.50	80	1.0		
791	1-00-00-01	CRANK SHP	4.50	80	1.0		
792	1-00-00-01	CRANK SHP	4.50	80	1.0		
793	1-00-00-01	CRANK SHP	4.50	80	1.0		
794	1-00-00-01	CRANK SHP	4.50	80	1.0		
795	1-00-00-01	CRANK SHP	4.50	80	1.0		
796	1-00-00-01	CRANK SHP	4.50	80	1.0		
797	1-00-00-01	CRANK SHP	4.50	80	1.0		
798	1-00-00-01	CRANK SHP	4.50	80	1.0		
799	1-00-00-01	CRANK SHP	4.50	80	1.0		
800	1-00-00-01	CRANK SHP	4.50	80	1.0		

## VC-138

## VC-145

Ref.No.	Part No.	Description	Remark
IC704	8-759-263-29	IC HD49315FEB (TR42/TR82/TR400/TR550/TR750)	
IC705	8-752-365-76	IC CXD2407R	
IC751	8-759-701-24	IC NJM3414M	
IC752	8-759-058-52	IC XRA10324AF	
IC753	8-752-365-65	IC CXD2126N	
IC754	8-759-247-07	IC MPC17A34VMEL	
IC755	8-759-031-58	IC SC7SU04F	
IC772	8-759-234-77	IC TC4S66F (TR82/TR400/TR550/TR750)	
IC773	8-759-234-77	IC TC4S66F (TR82/TR400/TR550/TR750)	
IC774	8-759-058-45	IC NJM3403AV (TE2) (TR82/TR400/TR550/TR750)	
IC775	8-759-080-34	IC TA75W01FU-TE12R (TR82/TR400/TR550/TR750)	
IC776	8-759-248-78	IC MB88102PFV-G-BND-ER (TR82/TR400/TR550/TR750)	
IC777	8-752-850-54	IC CXP87132-010R (TR82/TR400/TR550/TR750)	
< COIL >			
L601	1-412-058-11	INDUCTOR CHIP 10uH	
L602	1-414-078-11	INDUCTOR 10uH	
L603	1-412-058-11	INDUCTOR CHIP 10uH	
L604	1-414-078-11	INDUCTOR 10uH	
L605	1-410-391-11	INDUCTOR CHIP 68uH	
L606	1-414-078-11	INDUCTOR 10uH	
L607	1-414-078-11	INDUCTOR 10uH (TR82/TR400/TR550/TR750)	
L608	1-412-006-31	INDUCTOR CHIP 10uH	
L609	1-412-979-21	INDUCTOR 1uH	
L610	1-412-979-21	INDUCTOR 1uH	
L611	1-412-052-21	INDUCTOR CHIP 1uH	
L612	1-412-052-21	INDUCTOR CHIP 1uH	
L613	1-412-052-21	INDUCTOR CHIP 1uH	
L614	1-412-052-21	INDUCTOR CHIP 1uH	
L702	1-412-058-11	INDUCTOR CHIP 10uH	
L703	1-412-058-11	INDUCTOR CHIP 10uH	
L704	1-412-058-11	INDUCTOR CHIP 10uH	
L705	1-412-058-11	INDUCTOR CHIP 10uH	
L706	1-412-058-11	INDUCTOR CHIP 10uH	
L751	1-412-062-11	INDUCTOR CHIP 47uH	
L752	1-412-058-11	INDUCTOR CHIP 10uH	
L753	1-412-058-11	INDUCTOR CHIP 10uH	
L775	1-412-058-11	INDUCTOR CHIP 10uH (TR82/TR400/TR550/TR750)	
L777	1-414-078-11	INDUCTOR 10uH (TR82/TR400/TR550/TR750)	
L778	1-414-078-11	INDUCTOR 10uH (TR82/TR400/TR550/TR750)	
< TRANSISTOR >			
Q604	8-729-010-60	TRANSISTOR MSA1586	
Q605	8-729-010-60	TRANSISTOR MSA1586	
Q606	8-729-010-75	TRANSISTOR MSC4116	
Q607	8-729-010-75	TRANSISTOR MSC4116	

Ref.No.	Part No.	Description	Remark
Q701	8-729-403-27	TRANSISTOR XN4401	
Q751	8-729-010-75	TRANSISTOR MSC4116	
Q752	8-729-015-76	TRANSISTOR UN5211	
< RESISTOR >			
R601	1-216-851-11	METAL CHIP 330K 5% 1/16W	
R602	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R603	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R604	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R605	1-216-864-11	METAL CHIP 0 5% 1/16W	
R606	1-216-847-11	METAL CHIP 150K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R607	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R608	1-216-864-11	METAL CHIP 0 5% 1/16W	
R609	1-216-838-11	METAL CHIP 27K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R610	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R611	1-216-838-11	METAL CHIP 27K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	
R612	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R613	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R614	1-216-825-11	METAL CHIP 2.2K 5% 1/16W (TR70/TR80/TR400/TR750)	
R615	1-216-825-11	METAL CHIP 2.2K 5% 1/16W (TR70/TR80/TR400/TR750)	
R616	1-216-864-11	METAL CHIP 0 5% 1/16W (TR82)	
R619	1-216-803-11	METAL CHIP 33 5% 1/16W	
R620	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R621	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R622	1-216-864-11	METAL CHIP 0 5% 1/16W (TR70/TR80/TR400/TR750)	
R624	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR70/TR72/TR80/TR400/TR430/TR550/TR750)	
R626	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R627	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R628	1-216-834-11	METAL CHIP 12K 5% 1/16W (TR400/TR550/TR750)	
R629	1-216-832-11	METAL CHIP 8.2K 5% 1/16W (TR400/TR550/TR750)	
R629	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430)	
R630	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R631	1-216-864-11	METAL CHIP 0 5% 1/16W	
R634	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R635	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R636	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R637	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R638	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R639	1-216-864-11	METAL CHIP 0 5% 1/16W	
R640	1-216-815-11	METAL CHIP 330 5% 1/16W	



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R643	1-216-833-11	METAL CHIP	10K 5% 1/16W	R720	1-216-843-11	METAL CHIP	68K 5% 1/16W (TR82/TR400/TR550/TR750)
R645	1-216-834-11	METAL CHIP	12K 5% 1/16W	R720	1-216-844-11	METAL CHIP	82K 5% 1/16W (TR70/TR72/TR80/TR430)
R646	1-216-818-11	METAL CHIP	560 5% 1/16W	R721	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR82/TR400/TR550/TR750)
R647	1-216-834-11	METAL CHIP	12K 5% 1/16W	R722	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR82/TR400/TR550/TR750)
R648	1-216-818-11	METAL CHIP	560 5% 1/16W	R723	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR72/TR80/TR430)
R649	1-216-841-11	METAL CHIP	47K 5% 1/16W	R724	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR82/TR400/TR550/TR750)
R650	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R725	1-216-841-11	METAL CHIP	47K 5% 1/16W
R651	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R739	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42)
R652	1-216-841-11	METAL CHIP	47K 5% 1/16W	R740	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR72/TR80/TR82/TR400/TR430/TR550/TR750)
R653	1-216-864-11	METAL CHIP	0 5% 1/16W	R741	1-218-855-11	METAL CHIP	2.2K 0.50% 1/16W
R656	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	R742	1-218-865-11	METAL CHIP	5.6K 0.50% 1/16W
R657	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R743	1-216-833-11	METAL CHIP	10K 5% 1/16W
R658	1-216-864-11	METAL CHIP	0 5% 1/16W	R744	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R659	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R745	1-216-837-11	METAL CHIP	22K 5% 1/16W
R661	1-216-841-11	METAL CHIP	47K 5% 1/16W	R746	1-216-837-11	METAL CHIP	22K 5% 1/16W
R662	1-216-821-11	METAL CHIP	1K 5% 1/16W	R747	1-216-820-11	METAL CHIP	820 5% 1/16W
R663	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R748	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R664	1-216-821-11	METAL CHIP	1K 5% 1/16W	R749	1-216-851-11	METAL CHIP	330K 5% 1/16W
R665	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R750	1-216-841-11	METAL CHIP	47K 5% 1/16W
R666	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R751	1-216-809-11	METAL CHIP	100 5% 1/16W
R667	1-216-820-11	METAL CHIP	820 5% 1/16W	R752	1-216-821-11	METAL CHIP	1K 5% 1/16W
R668	1-216-824-11	METAL CHIP	1.8K 5% 1/16W	R753	1-216-845-11	METAL CHIP	100K 5% 1/16W
R669	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R754	1-216-848-11	METAL CHIP	180K 5% 1/16W
R670	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R755	1-216-855-11	METAL CHIP	680K 5% 1/16W
R701	1-216-857-11	METAL CHIP	1M 5% 1/16W	R756	1-216-848-11	METAL CHIP	180K 5% 1/16W
R702	1-216-833-11	METAL CHIP	10K 5% 1/16W	R757	1-216-833-11	METAL CHIP	10K 5% 1/16W
R703	1-216-845-11	METAL CHIP	100K 5% 1/16W	R758	1-216-837-11	METAL CHIP	22K 5% 1/16W
R704	1-216-840-11	METAL CHIP	39K 5% 1/16W (TR42/TR82/TR400/TR550/TR750)	R759	1-216-837-11	METAL CHIP	22K 5% 1/16W
R705	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R760	1-216-826-11	METAL CHIP	2.7K 5% 1/16W
R709	1-216-845-11	METAL CHIP	100K 5% 1/16W	R761	1-216-842-11	METAL CHIP	56K 5% 1/16W
R710	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	R762	1-216-842-11	METAL CHIP	56K 5% 1/16W
R711	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R764	1-216-828-11	METAL CHIP	3.9K 5% 1/16W
R712	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR430)	R765	1-216-833-11	METAL CHIP	10K 5% 1/16W (TR82/TR400/TR550/TR750)
R713	1-216-807-11	METAL CHIP	68 5% 1/16W	R766	1-216-835-11	METAL CHIP	15K 5% 1/16W (TR82/TR400/TR550/TR750)
R714	1-216-864-11	METAL CHIP	0 5% 1/16W	R767	1-216-850-11	METAL CHIP	270K 5% 1/16W (TR82/TR400/TR550/TR750)
R715	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R768	1-216-833-11	METAL CHIP	10K 5% 1/16W (TR82/TR400/TR550/TR750)
R716	1-218-847-11	METAL CHIP	1K 0.50% 1/16W	R769	1-216-850-11	METAL CHIP	270K 5% 1/16W (TR82/TR400/TR550/TR750)
R717	1-216-864-11	METAL CHIP	0 5% 1/16W (TR82/TR400/TR550/TR750)	R770	1-216-835-11	METAL CHIP	15K 5% 1/16W (TR82/TR400/TR550/TR750)
R718	1-216-807-11	METAL CHIP	68 5% 1/16W	R771	1-216-803-11	METAL CHIP	33 5% 1/16W (TR82/TR400/TR550/TR750)
R719	1-218-876-11	METAL CHIP	16K 0.50% 1/16W				
R720	1-216-841-11	METAL CHIP	47K 5% 1/16W (TR42)				



## VC-138

## VC-145

## VF-65

Ref. No.	Part No.	Description	Remark
R772	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R773	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R774	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R775	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R776	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R777	1-216-837-11	METAL CHIP 22K 5% 1/16W (TR82/TR400/TR550/TR750)	
R778	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR82/TR400/TR550/TR750)	
R779	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R780	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R781	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR82/TR400/TR550/TR750)	
R782	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R783	1-218-911-11	METAL CHIP 470K 0.50% 1/16W (TR82/TR400/TR550/TR750)	
R786	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R787	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R788	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R789	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
R790	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR82/TR400/TR550/TR750)	
R791	1-216-864-11	METAL CHIP 0 5% 1/16W (TR82/TR400/TR550/TR750)	
R792	1-216-857-11	METAL CHIP 1M 5% 1/16W (TR82/TR400/TR550/TR750)	
R793	1-216-841-11	METAL CHIP 47K 5% 1/16W (TR82/TR400/TR550/TR750)	
< VIBRATOR >			
X601	1-760-081-21	VIBRATOR, CERAMIC (24MHz)	
X701	1-760-320-11	VIBRATOR, CRYSTAL (28.6363MHz)	
X775	1-579-553-11	VIBRATOR (12MHz) (TR82/TR400/TR550/TR750)	
*****			
*	A-7063-957-A	VF-65 BOARD, COMPLETE	
		*****	
		(TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
		(Ref. No. 8,000 Series)	
< CAPACITOR >			
C901	1-124-635-00	ELECT 220uF 20% 6.3V	

Ref. No.	Part No.	Description	Remark
C902	1-163-038-11	CERAMIC CHIP 0.1uF	25V
C903	1-135-091-21	TANTAL. CHIP 1uF	20% 16V
C904	1-163-011-11	CERAMIC CHIP 0.0015uF	10% 50V
C905	1-104-753-11	TANTAL. CHIP 47uF	20% 6.3V
C906	1-162-638-11	CERAMIC CHIP 1uF	16V
C907	1-137-306-11	FILM CHIP 0.1uF	5% 16V
C908	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C909	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
△C910	1-164-758-11	CERAMIC CHIP 0.0039uF	5% 50V
△C911	1-164-715-11	CERAMIC CHIP 0.0068uF	5% 50V
C912	1-127-532-11	ELECT (SOLID) 47uF	20% 6.3V
C913	1-124-577-11	ELECT 82uF	20% 10V
C914	1-128-007-11	ELECT CHIP 2.2uF	20% 35V
C915	1-163-037-11	CERAMIC CHIP 0.022uF	10% 25V
C916	1-164-611-11	CERAMIC CHIP 0.001uF	10% 500V
< CONNECTOR >			
CN901	1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
CN902	1-573-290-11	PIN, CONNECTOR (1.5MM) (SMD) 4P	
< DIODE >			
D901	8-719-404-19	DIODE LN1251 (TALLY)	
D903	8-719-400-20	DIODE MA152WA	
< IC >			
IC901	8-759-196-14	IC BA7149F-E2	
< COIL >			
L901	1-412-031-11	INDUCTOR CHIP 47uH	
L902	1-410-389-31	INDUCTOR CHIP 47uH	
△L903	1-402-680-21	COIL, FERRITE (HLC)	
< TRANSISTOR >			
△Q901	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q902	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q903	8-729-216-31	TRANSISTOR 2SA1163-G	
Q904	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
< RESISTOR >			
R901	1-216-041-00	METAL CHIP 470 5% 1/10W	
R902	1-216-041-00	METAL CHIP 470 5% 1/10W	
R903	1-216-035-00	METAL CHIP 270 5% 1/10W	
△R904	1-216-073-00	METAL CHIP 10K 5% 1/10W	
△R905	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R906	1-216-047-00	METAL CHIP 820 5% 1/10W	
R907	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R908	1-216-111-00	METAL CHIP 390K 5% 1/10W	
R909	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R910	1-216-077-00	METAL CHIP 15K 5% 1/10W	

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Ref. No.	Part No.	Description	Remark		
R911	1-216-160-00	METAL GLAZE	27	5%	1/8W
R912	1-216-121-00	METAL CHIP	1M	5%	1/10W
R913	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R914	1-216-025-00	METAL CHIP	100	5%	1/10W
R915	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R916	1-216-683-11	METAL CHIP	22K	0.5%	1/10W
R917	1-216-693-11	METAL CHIP	56K	0.5%	1/10W
R918	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R919	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R920	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R921	1-216-311-00	METAL CHIP	6.8	5%	1/10W
R922	1-216-101-00	METAL CHIP	150K	5%	1/10W
R923	1-216-121-00	METAL CHIP	1M	5%	1/10W
R924	1-216-131-11	METAL CHIP	2.7M	5%	1/10W
R925	1-216-131-11	METAL CHIP	2.7M	5%	1/10W
R926	1-216-295-00	METAL CHIP	0	5%	1/10W
R927	1-216-049-00	METAL CHIP	1K	5%	1/10W
R928	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
< VARIABLE RESISTOR >					
RV903	1-238-086-11	RES, ADJ, CERMET	470		
RV904	1-223-566-11	RES, ADJ, METAL GLAZE	1M		
< TRANSFORMER >					
△T901	1-453-124-11	TRANSFORMER ASSY, FLYBACK			
< THERMISTOR >					
TH901	1-809-350-21	THERMISTOR, NTC (2125)			
< SOCKET >					
△W901	1-540-019-21	SOCKET ASSY, CRT			
*****					
*	A-7066-010-A	VF-66 BOARD, COMPLETE (TR70/TR80)			
*****					
(Ref. No. 4,000 Series)					
< CAPACITOR >					
C851	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C852	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C853	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V
C854	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C855	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C856	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C857	1-164-676-11	CERAMIC CHIP	2200PF	5%	16V
C858	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C859	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C860	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C861	1-104-917-11	TANTAL. CHIP	15uF	20%	20V

Ref. No.	Part No.	Description	Remark		
C862	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C863	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C864	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C865	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C866	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C867	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C868	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C869	1-163-020-00	CERAMIC CHIP	0.0082uF	10%	50V
C870	1-162-974-11	CERAMIC CHIP	0.01uF		50V
< CONNECTOR >					
CN851	1-573-354-11	CONNECTOR, FFC/FPC 14P			
CN852	1-573-354-11	CONNECTOR, FFC/FPC 14P			
CN853	1-573-811-11	CONNECTOR, BOARD TO BOARD 12P			
< DIODE >					
D851	8-719-404-19	DIODE LN1251C (TALLY)			
D852	8-719-043-70	DIODE MAGS121			
D853	8-719-802-36	DIODE 1SS250			
< IC >					
IC851	8-759-097-75	IC MB3789PFV-G-BND-ER			
IC852	8-759-508-68	IC XRA10358F-E2			
< COIL >					
L851	1-412-033-11	INDUCTOR CHIP 220uH			
L852	1-412-029-11	INDUCTOR CHIP 10uH			
L853	1-412-033-11	INDUCTOR CHIP 220uH			
< TRANSISTOR >					
Q851	8-729-024-60	TRANSISTOR MTD6N15T4			
Q852	8-729-402-84	TRANSISTOR XN4601			
Q853	8-729-923-62	TRANSISTOR DTA123JK			
< RESISTOR >					
R851	1-216-819-11	METAL CHIP	680	5%	1/16W
R852	1-216-841-11	METAL CHIP	47K	5%	1/16W
R853	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R854	1-218-901-11	METAL CHIP	180K	0.50%	1/16W
R855	1-216-840-11	METAL CHIP	39K	5%	1/16W
R856	1-218-899-11	METAL CHIP	150K	0.50%	1/16W
R857	1-218-903-11	METAL CHIP	220K	0.50%	1/16W
R858	1-216-841-11	METAL CHIP	47K	5%	1/16W
R859	1-216-849-11	METAL CHIP	220K	5%	1/16W
R860	1-216-843-11	METAL CHIP	68K	5%	1/16W
R861	1-216-843-11	METAL CHIP	68K	5%	1/16W
R862	1-216-838-11	METAL CHIP	27K	5%	1/16W
R863	1-216-847-11	METAL CHIP	150K	5%	1/16W
R864	1-216-840-11	METAL CHIP	39K	5%	1/16W
R865	1-216-841-11	METAL CHIP	47K	5%	1/16W

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Dist. No.	Post. No.	Party System			Area
0001	1-000-000-00	DEM. CLASH	27	00	1/00
0002	1-000-000-00	DEM. CLASH	27	00	1/00
0003	1-000-000-00	DEM. CLASH	1.00	00	1/00
0004	1-000-000-00	DEM. CLASH	1.00	00	1/00
0005	1-000-000-00	DEM. CLASH	4.7	00	1/00
0006	1-000-000-01	DEM. CLASH	000	0.00	1/00
0007	1-000-000-01	DEM. CLASH	000	0.00	1/00
0008	1-000-000-00	DEM. CLASH	0.00	00	1/00
0009	1-000-000-01	DEM. CLASH	000	0.00	1/00
0010	1-000-000-01	DEM. CLASH	000	0.00	1/00
0011	1-000-000-00	DEM. CLASH	0.0	00	1/00
0012	1-000-000-00	DEM. CLASH	0.00	00	1/00
0013	1-000-000-00	DEM. CLASH	00	00	1/00
0014	1-000-000-00	DEM. CLASH	0.00	00	1/00
0015	1-000-000-01	DEM. CLASH	0.00	00	1/00
0016	1-000-000-00	DEM. CLASH	0	00	1/00
0017	1-000-000-00	DEM. CLASH	00	00	1/00
0018	1-000-000-00	DEM. CLASH	1.00	00	1/00
+ TABLE SECTION 1					
0019	1-000-000-01	DEM. CLASH	000	0.00	1/00
0020	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 2					
0021	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 3					
0022	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 4					
0023	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 5					
0024	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 6					
0025	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 7					
0026	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 8					
0027	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 9					
0028	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 10					
0029	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 11					
0030	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 12					
0031	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 13					
0032	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 14					
0033	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 15					
0034	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 16					
0035	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 17					
0036	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 18					
0037	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 19					
0038	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 20					
0039	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 21					
0040	1-000-000-01	DEM. CLASH	000	0.00	1/00
+ TABLE SECTION 22					

REV.	DATE	DESCRIPTION	AMOUNT	BALANCE
0001	1-01-01-01	DEPOSIT	1.00	1.00
0002	1-02-01-01	DEPOSIT	1.00	2.00
0003	1-03-01-01	DEPOSIT	1.00	3.00
0004	1-04-01-01	DEPOSIT	1.00	4.00
0005	1-05-01-01	DEPOSIT	1.00	5.00
0006	1-06-01-01	DEPOSIT	1.00	6.00
0007	1-07-01-01	DEPOSIT	1.00	7.00
0008	1-08-01-01	DEPOSIT	1.00	8.00
0009	1-09-01-01	DEPOSIT	1.00	9.00
0010	1-10-01-01	DEPOSIT	1.00	10.00
C CLOSING 1				
0011	1-01-02-01	DEPOSIT	1.00	11.00
0012	1-02-02-01	DEPOSIT	1.00	12.00
0013	1-03-02-01	DEPOSIT	1.00	13.00
C CLOSING 2				
0014	1-01-03-01	DEPOSIT	1.00	14.00
0015	1-02-03-01	DEPOSIT	1.00	15.00
0016	1-03-03-01	DEPOSIT	1.00	16.00
C CLOSING 3				
0017	1-01-04-01	DEPOSIT	1.00	17.00
0018	1-02-04-01	DEPOSIT	1.00	18.00
0019	1-03-04-01	DEPOSIT	1.00	19.00
C CLOSING 4				
0020	1-01-05-01	DEPOSIT	1.00	20.00
0021	1-02-05-01	DEPOSIT	1.00	21.00
0022	1-03-05-01	DEPOSIT	1.00	22.00
C CLOSING 5				
0023	1-01-06-01	DEPOSIT	1.00	23.00
0024	1-02-06-01	DEPOSIT	1.00	24.00
0025	1-03-06-01	DEPOSIT	1.00	25.00
0026	1-04-06-01	DEPOSIT	1.00	26.00
0027	1-05-06-01	DEPOSIT	1.00	27.00
0028	1-06-06-01	DEPOSIT	1.00	28.00
0029	1-07-06-01	DEPOSIT	1.00	29.00
0030	1-08-06-01	DEPOSIT	1.00	30.00
0031	1-09-06-01	DEPOSIT	1.00	31.00
0032	1-10-06-01	DEPOSIT	1.00	32.00
0033	1-11-06-01	DEPOSIT	1.00	33.00
0034	1-12-06-01	DEPOSIT	1.00	34.00
0035	1-01-07-01	DEPOSIT	1.00	35.00
0036	1-02-07-01	DEPOSIT	1.00	36.00
0037	1-03-07-01	DEPOSIT	1.00	37.00
0038	1-04-07-01	DEPOSIT	1.00	38.00
0039	1-05-07-01	DEPOSIT	1.00	39.00
0040	1-06-07-01	DEPOSIT	1.00	40.00
0041	1-07-07-01	DEPOSIT	1.00	41.00
0042	1-08-07-01	DEPOSIT	1.00	42.00
0043	1-09-07-01	DEPOSIT	1.00	43.00
0044	1-10-07-01	DEPOSIT	1.00	44.00
0045	1-11-07-01	DEPOSIT	1.00	45.00
0046	1-12-07-01	DEPOSIT	1.00	46.00
0047	1-01-08-01	DEPOSIT	1.00	47.00
0048	1-02-08-01	DEPOSIT	1.00	48.00
0049	1-03-08-01	DEPOSIT	1.00	49.00
0050	1-04-08-01	DEPOSIT	1.00	50.00
0051	1-05-08-01	DEPOSIT	1.00	51.00
0052	1-06-08-01	DEPOSIT	1.00	52.00
0053	1-07-08-01	DEPOSIT	1.00	53.00
0054	1-08-08-01	DEPOSIT	1.00	54.00
0055	1-09-08-01	DEPOSIT	1.00	55.00
0056	1-10-08-01	DEPOSIT	1.00	56.00
0057	1-11-08-01	DEPOSIT	1.00	57.00
0058	1-12-08-01	DEPOSIT	1.00	58.00
0059	1-01-09-01	DEPOSIT	1.00	59.00
0060	1-02-09-01	DEPOSIT	1.00	60.00
0061	1-03-09-01	DEPOSIT	1.00	61.00
0062	1-04-09-01	DEPOSIT	1.00	62.00
0063	1-05-09-01	DEPOSIT	1.00	63.00
0064	1-06-09-01	DEPOSIT	1.00	64.00
0065	1-07-09-01	DEPOSIT	1.00	65.00
0066	1-08-09-01	DEPOSIT	1.00	66.00
0067	1-09-09-01	DEPOSIT	1.00	67.00
0068	1-10-09-01	DEPOSIT	1.00	68.00
0069	1-11-09-01	DEPOSIT	1.00	69.00
0070	1-12-09-01	DEPOSIT	1.00	70.00
0071	1-01-10-01	DEPOSIT	1.00	71.00
0072	1-02-10-01	DEPOSIT	1.00	72.00
0073	1-03-10-01	DEPOSIT	1.00	73.00
0074	1-04-10-01	DEPOSIT	1.00	74.00
0075	1-05-10-01	DEPOSIT	1.00	75.00
0076	1-06-10-01	DEPOSIT	1.00	76.00
0077	1-07-10-01	DEPOSIT	1.00	77.00
0078	1-08-10-01	DEPOSIT	1.00	78.00
0079	1-09-10-01	DEPOSIT	1.00	79.00
0080	1-10-10-01	DEPOSIT	1.00	80.00
0081	1-11-10-01	DEPOSIT	1.00	81.00
0082	1-12-10-01	DEPOSIT	1.00	82.00
0083	1-01-11-01	DEPOSIT	1.00	83.00
0084	1-02-11-01	DEPOSIT	1.00	84.00
0085	1-03-11-01	DEPOSIT	1.00	85.00
0086	1-04-11-01	DEPOSIT	1.00	86.00
0087	1-05-11-01	DEPOSIT	1.00	87.00
0088	1-06-11-01	DEPOSIT	1.00	88.00
0089	1-07-11-01	DEPOSIT	1.00	89.00
0090	1-08-11-01	DEPOSIT	1.00	90.00
0091	1-09-11-01	DEPOSIT	1.00	91.00
0092	1-10-11-01	DEPOSIT	1.00	92.00
0093	1-11-11-01	DEPOSIT	1.00	93.00
0094	1-12-11-01	DEPOSIT	1.00	94.00
0095	1-01-12-01	DEPOSIT	1.00	95.00
0096	1-02-12-01	DEPOSIT	1.00	96.00
0097	1-03-12-01	DEPOSIT	1.00	97.00
0098	1-04-12-01	DEPOSIT	1.00	98.00
0099	1-05-12-01	DEPOSIT	1.00	99.00
0100	1-06-12-01	DEPOSIT	1.00	100.00

The components identified by your  
diagram should then be made in an  
order that is logical.

Les engagements identifiés par vos équipes et, dans certains pays, les clients.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R867	1-216-850-11	METAL CHIP	270K 5% 1/16W	C932	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R868	1-216-864-11	METAL CHIP	0 5% 1/16W	C933	1-164-156-11	CERAMIC CHIP	0.1uF 25V
R869	1-216-843-11	METAL CHIP	68K 5% 1/16W	C934	1-135-145-11	TANTALUM CHIP	0.47uF 10% 35V
R870	1-216-842-11	METAL CHIP	56K 5% 1/16W	C935	1-135-179-21	TANTAL. CHIP	2.2uF 20% 16V
R871	1-216-850-11	METAL CHIP	270K 5% 1/16W	C936	1-162-967-11	CERAMIC CHIP	0.0033uF 10% 50V
R872	1-216-833-11	METAL CHIP	10K 5% 1/16W	C937	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V
R873	1-216-851-11	METAL CHIP	330K 5% 1/16W	C938	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
R874	1-216-847-11	METAL CHIP	150K 5% 1/16W	C939	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
R875	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	C940	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
R876	1-216-833-11	METAL CHIP	10K 5% 1/16W	C941	1-164-357-11	CERAMIC CHIP	1000PF 5% 50V
R877	1-216-794-11	METAL CHIP	5.6 5% 1/16W	C942	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R878	1-216-804-11	METAL CHIP	39 5% 1/16W	C943	1-164-156-11	CERAMIC CHIP	0.1uF 25V
R879	1-216-837-11	METAL CHIP	22K 5% 1/16W	C945	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R880	1-216-839-11	METAL CHIP	33K 5% 1/16W	C946	1-135-179-21	TANTAL. CHIP	2.2uF 20% 16V
R881	1-216-853-11	METAL CHIP	470K 5% 1/16W	C947	1-162-974-11	CERAMIC CHIP	0.01uF 50V
R891	1-216-296-00	METAL CHIP	0 5% 1/8W	C948	1-162-974-11	CERAMIC CHIP	0.01uF 50V
< TRANSFORMER >				C949	1-135-178-11	TANTAL. CHIP	1.5uF 20% 20V
△T851	0-396-458-00			C950	1-162-974-11	CERAMIC CHIP	0.01uF 50V
*****				C951	1-162-974-11	CERAMIC CHIP	0.01uF 50V
* A-7066-011-A VF-67 BOARD, COMPLETE (TR70/TR80)				C953	1-164-346-11	CERAMIC CHIP	1uF 16V
*****				C954	1-162-974-11	CERAMIC CHIP	0.01uF 50V
< CAPACITOR >				< CONNECTOR >			
C901	1-162-974-11	CERAMIC CHIP	0.01uF 50V	CN901	1-573-354-11	CONNECTOR, FFC/FPC 14P	
C902	1-162-974-11	CERAMIC CHIP	0.01uF 50V	* CN902	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P	
C903	1-162-974-11	CERAMIC CHIP	0.01uF 50V	* CN903	1-573-356-11	CONNECTOR, FFC/FPC 16P	
C904	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	< DIODE >			
C905	1-135-091-21	TANTAL. CHIP	1uF 20% 16V	D901	8-719-025-91	DIODE MA365(E)	
C906	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V	D903	8-719-404-49	DIODE MA111	
C907	1-135-091-21	TANTAL. CHIP	1uF 20% 16V	< IC >			
C908	1-162-919-11	CERAMIC CHIP	22PF 5% 50V	IC901	8-752-067-59	IC CXA1785R	
C909	1-162-974-11	CERAMIC CHIP	0.01uF 50V	IC902	8-752-362-78	IC CXD2403R	
C910	1-162-974-11	CERAMIC CHIP	0.01uF 50V	IC903	8-759-251-40	IC MB88E346PFV-G-BND-ER	
C911	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	< COIL >			
C913	1-164-156-11	CERAMIC CHIP	0.1uF 25V	L901	1-412-951-11	INDUCTOR 10uH	
C914	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L902	1-412-962-11	INDUCTOR 82uH	
C915	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L904	1-412-951-11	INDUCTOR 10uH	
C916	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L905	1-412-949-21	INDUCTOR 6.8uH	
C917	1-162-974-11	CERAMIC CHIP	0.01uF 50V	L906	1-412-959-11	INDUCTOR 47uH	
C920	1-165-176-11	CERAMIC CHIP	0.047uF 10% 16V	< TRANSISTOR >			
C921	1-162-974-11	CERAMIC CHIP	0.01uF 50V	Q901	8-729-402-84	TRANSISTOR XN4601	
C925	1-164-156-11	CERAMIC CHIP	0.1uF 25V	Q902	8-729-402-42	TRANSISTOR UN5213	
C926	1-135-181-21	TANTALUM CHIP	4.7uF 20% 6.3V	< RESISTOR >			
C927	1-162-974-11	CERAMIC CHIP	0.01uF 50V	R902	1-216-836-11	METAL CHIP	18K 5% 1/16W
C928	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V	R903	1-216-842-11	METAL CHIP	56K 5% 1/16W
C929	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V				
C930	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V				
C931	1-162-974-11	CERAMIC CHIP	0.01uF 50V				

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

Les composants identifiés par une marque △ sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

Roll No.	Part No.	Description	Unit	Qty	Rate
001	1-100-000-01	WATER, CUP	100	10	1000
002	1-100-000-02	WATER, CUP	100	10	1000
003	1-100-000-03	WATER, CUP	100	10	1000
004	1-100-000-04	WATER, CUP	100	10	1000
005	1-100-000-05	WATER, CUP	100	10	1000
006	1-100-000-06	WATER, CUP	100	10	1000
007	1-100-000-07	WATER, CUP	100	10	1000
008	1-100-000-08	WATER, CUP	100	10	1000
009	1-100-000-09	WATER, CUP	100	10	1000
010	1-100-000-10	WATER, CUP	100	10	1000
011	1-100-000-11	WATER, CUP	100	10	1000
012	1-100-000-12	WATER, CUP	100	10	1000
013	1-100-000-13	WATER, CUP	100	10	1000
014	1-100-000-14	WATER, CUP	100	10	1000
015	1-100-000-15	WATER, CUP	100	10	1000
016	1-100-000-16	WATER, CUP	100	10	1000
017	1-100-000-17	WATER, CUP	100	10	1000
018	1-100-000-18	WATER, CUP	100	10	1000
019	1-100-000-19	WATER, CUP	100	10	1000
020	1-100-000-20	WATER, CUP	100	10	1000

100

**Figure 6**

**Abstract**

[illegible][illegible]

Part No.	Part No.	Description	QTY	Price
3333	1-28-014-01	CRANK	1.0000	1.00
3334	1-28-014-02	CRANK	1.0000	1.00
3335	1-28-014-03	CRANK	1.0000	1.00
3336	1-28-014-04	CRANK	1.0000	1.00
3337	1-28-014-05	CRANK	1.0000	1.00
3338	1-28-014-06	CRANK	1.0000	1.00
3339	1-28-014-07	CRANK	1.0000	1.00
3340	1-28-014-08	CRANK	1.0000	1.00
3341	1-28-014-09	CRANK	1.0000	1.00
3342	1-28-014-10	CRANK	1.0000	1.00
3343	1-28-014-11	CRANK	1.0000	1.00
3344	1-28-014-12	CRANK	1.0000	1.00
3345	1-28-014-13	CRANK	1.0000	1.00
3346	1-28-014-14	CRANK	1.0000	1.00
3347	1-28-014-15	CRANK	1.0000	1.00
3348	1-28-014-16	CRANK	1.0000	1.00
3349	1-28-014-17	CRANK	1.0000	1.00
3350	1-28-014-18	CRANK	1.0000	1.00
3351	1-28-014-19	CRANK	1.0000	1.00
3352	1-28-014-20	CRANK	1.0000	1.00
3353	1-28-014-21	CRANK	1.0000	1.00
3354	1-28-014-22	CRANK	1.0000	1.00
3355	1-28-014-23	CRANK	1.0000	1.00
3356	1-28-014-24	CRANK	1.0000	1.00
3357	1-28-014-25	CRANK	1.0000	1.00
3358	1-28-014-26	CRANK	1.0000	1.00
3359	1-28-014-27	CRANK	1.0000	1.00
3360	1-28-014-28	CRANK	1.0000	1.00
3361	1-28-014-29	CRANK	1.0000	1.00
3362	1-28-014-30	CRANK	1.0000	1.00
3363	1-28-014-31	CRANK	1.0000	1.00
3364	1-28-014-32	CRANK	1.0000	1.00
3365	1-28-014-33	CRANK	1.0000	1.00
3366	1-28-014-34	CRANK	1.0000	1.00
3367	1-28-014-35	CRANK	1.0000	1.00
3368	1-28-014-36	CRANK	1.0000	1.00
3369	1-28-014-37	CRANK	1.0000	1.00
3370	1-28-014-38	CRANK	1.0000	1.00
3371	1-28-014-39	CRANK	1.0000	1.00
3372	1-28-014-40	CRANK	1.0000	1.00
3373	1-28-014-41	CRANK	1.0000	1.00
3374	1-28-014-42	CRANK	1.0000	1.00
3375	1-28-014-43	CRANK	1.0000	1.00
3376	1-28-014-44	CRANK	1.0000	1.00
3377	1-28-014-45	CRANK	1.0000	1.00
3378	1-28-014-46	CRANK	1.0000	1.00
3379	1-28-014-47	CRANK	1.0000	1.00
3380	1-28-014-48	CRANK	1.0000	1.00
3381	1-28-014-49	CRANK	1.0000	1.00
3382	1-28-014-50	CRANK	1.0000	1.00
3383	1-28-014-51	CRANK	1.0000	1.00
3384	1-28-014-52	CRANK	1.0000	1.00
3385	1-28-014-53	CRANK	1.0000	1.00
3386	1-28-014-54	CRANK	1.0000	1.00
3387	1-28-014-55	CRANK	1.0000	1.00
3388	1-28-014-56	CRANK	1.0000	1.00
3389	1-28-014-57	CRANK	1.0000	1.00
3390	1-28-014-58	CRANK	1.0000	1.00
3391	1-28-014-59	CRANK	1.0000	1.00
3392	1-28-014-60	CRANK	1.0000	1.00
3393	1-28-014-61	CRANK	1.0000	1.00
3394	1-28-014-62	CRANK	1.0000	1.00
3395	1-28-014-63	CRANK	1.0000	1.00
3396	1-28-014-64	CRANK	1.0000	1.00
3397	1-28-014-65	CRANK	1.0000	1.00
3398	1-28-014-66	CRANK	1.0000	1.00
3399	1-28-014-67	CRANK	1.0000	1.00
3400	1-28-014-68	CRANK	1.0000	1.00
3401	1-28-014-69	CRANK	1.0000	1.00
3402	1-28-014-70	CRANK	1.0000	1.00

100

CH001	1-001-00-01	CONTRACT	1000000000
CH002	1-001-00-02	CONTRACT	1000000000
CH003	1-001-00-03	CONTRACT	1000000000

100

[illegible]

1000

1001	1-10-10-10-10	10	1001
1002	1-10-10-10-10	10	1002
1003	1-10-10-10-10	10	1003

1000

LINE	7-0-0-0-0-0	WOLCOTT	1.00
LINE	7-0-0-0-0-0	WOLCOTT	1.00
LINE	7-0-0-0-0-0	WOLCOTT	1.00
LINE	7-0-0-0-0-0	WOLCOTT	1.00
LINE	7-0-0-0-0-0	WOLCOTT	1.00

100

1992	1993	1994	1995
1996	1997	1998	1999

100

[illegible]

The components identified by parts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 84

Les entreprises identifiées par nos équipes de nos collègues pour la semaine.

Il est possible que ces entreprises ne soient pas encore officiellement identifiées.

Ref. No.	Part No.	Description	Remark		
R904	1-216-857-11	METAL CHIP	1M	5%	1/16W
R906	1-216-841-11	METAL CHIP	47K	5%	1/16W
R907	1-216-833-11	METAL CHIP	10K	5%	1/16W
R908	1-216-821-11	METAL CHIP	1K	5%	1/16W
R910	1-216-814-11	METAL CHIP	270	5%	1/16W
R911	1-216-864-11	METAL CHIP	0	5%	1/16W
R912	1-216-821-11	METAL CHIP	1K	5%	1/16W
R913	1-220-397-11	METAL GLAZE	4.7M	5%	1/16W
R914	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R919	1-216-839-11	METAL CHIP	33K	5%	1/16W
R920	1-216-839-11	METAL CHIP	33K	5%	1/16W
R921	1-216-857-11	METAL CHIP	1M	5%	1/16W
R922	1-216-839-11	METAL CHIP	33K	5%	1/16W
R923	1-216-839-11	METAL CHIP	33K	5%	1/16W
R924	1-216-864-11	METAL CHIP	0	5%	1/16W
R925	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R926	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R930	1-216-833-11	METAL CHIP	10K	5%	1/16W
R931	1-216-839-11	METAL CHIP	33K	5%	1/16W
R933	1-216-864-11	METAL CHIP	0	5%	1/16W
R934	1-216-821-11	METAL CHIP	1K	5%	1/16W
R936	1-218-873-11	METAL CHIP	12K	0.50%	1/16W
R937	1-218-905-11	METAL CHIP	270K	0.50%	1/16W
R938	1-216-849-11	METAL CHIP	220K	5%	1/16W
R939	1-216-837-11	METAL CHIP	22K	5%	1/16W
R946	1-216-821-11	METAL CHIP	33K	5%	1/16W
R947	1-216-807-11	METAL CHIP	68	5%	1/16W
R948	1-216-807-11	METAL CHIP	68	5%	1/16W
R949	1-216-807-11	METAL CHIP	68	5%	1/16W
R953	1-216-840-11	METAL CHIP	39K	5%	1/16W
R954	1-216-840-11	METAL CHIP	39K	5%	1/16W
R959	1-216-844-11	METAL CHIP	82K	5%	1/16W
R960	1-216-845-11	METAL CHIP	100K	5%	1/16W
R961	1-216-850-11	METAL CHIP	270K	5%	1/16W
R969	1-216-839-11	METAL CHIP	33K	5%	1/16W
R970	1-216-839-11	METAL CHIP	33K	5%	1/16W
R971	1-216-844-11	METAL CHIP	82K	5%	1/16W
R973	1-216-839-11	METAL CHIP	33K	5%	1/16W
R974	1-216-839-11	METAL CHIP	33K	5%	1/16W
< VIBRATOR >					
X901	1-579-466-11	VIBRATOR, CRYSTAL (3.58MHz)			

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Ref. No.	Part No.	Description	Remark
*	A-7063-959-A	VS-104 BOARD, COMPLETE (TR72) *****	
*	A-7066-008-A	VS-104 BOARD, COMPLETE (TR80) *****	
*	A-7066-079-A	VS-104 (H) BOARD, COMPLETE (TR400) *****	
*	A-7066-086-A	VS-104 BOARD, COMPLETE (TR430) *****	
*	A-7066-134-A	VS-104 (H) BOARD, COMPLETE (TR750) *****	
*	A-7063-953-A	VS-112 BOARD, COMPLETE (TR82) *****	
*	A-7066-019-A	VS-112 BOARD, COMPLETE (TR70) *****	
*	A-7066-047-A	VS-112 (LL) BOARD, COMPLETE (TR42) *****	
*	A-7066-085-A	VS-112 BOARD, COMPLETE (TR550) *****	
(Ref. No. 30,000 Series)			
< CAPACITOR >			
C101	1-162-921-11	CERAMIC CHIP 33PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
C102	1-162-911-11	CERAMIC CHIP 6PF 0.5PF 50V (TR400/TR750)	
C102	1-162-922-11	CERAMIC CHIP 39PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
C103	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C104	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C106	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C107	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C108	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C109	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C110	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	
C111	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C112	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C113	1-164-217-11	CERAMIC CHIP 150PF 5% 50V	
C114	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C115	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C116	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C117	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V	
C118	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V	
C119	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C120	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C121	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C122	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C123	1-162-974-11	CERAMIC CHIP 0.01uF 50V	

Ref. No.	Part No.	Description	QTY	UNIT	PRICE
9984	1-100-007-12	WREN. CRIP	25	EA	1.7500
9985	1-100-007-13	WREN. CRIP	25	EA	1.7500
9986	1-100-008-11	WREN. CRIP	25	EA	1.7500
9987	1-100-009-12	WREN. CRIP	25	EA	1.7500
9988	1-100-009-13	WREN. CRIP	25	EA	1.7500
9989	1-100-010-11	WREN. CRIP	25	EA	1.7500
9990	1-100-010-12	WREN. CRIP	25	EA	1.7500
9991	1-100-011-11	WREN. CRIP	25	EA	1.7500
9992	1-100-011-12	WREN. CRIP	25	EA	1.7500
9993	1-100-012-11	WREN. CRIP	25	EA	1.7500
9994	1-100-012-12	WREN. CRIP	25	EA	1.7500
9995	1-100-013-11	WREN. CRIP	25	EA	1.7500
9996	1-100-013-12	WREN. CRIP	25	EA	1.7500
9997	1-100-014-11	WREN. CRIP	25	EA	1.7500
9998	1-100-014-12	WREN. CRIP	25	EA	1.7500
9999	1-100-015-11	WREN. CRIP	25	EA	1.7500
10000	1-100-015-12	WREN. CRIP	25	EA	1.7500
10001	1-100-016-11	WREN. CRIP	25	EA	1.7500
10002	1-100-016-12	WREN. CRIP	25	EA	1.7500
10003	1-100-017-11	WREN. CRIP	25	EA	1.7500
10004	1-100-017-12	WREN. CRIP	25	EA	1.7500
10005	1-100-018-11	WREN. CRIP	25	EA	1.7500
10006	1-100-018-12	WREN. CRIP	25	EA	1.7500
10007	1-100-019-11	WREN. CRIP	25	EA	1.7500
10008	1-100-019-12	WREN. CRIP	25	EA	1.7500
10009	1-100-020-11	WREN. CRIP	25	EA	1.7500
10010	1-100-020-12	WREN. CRIP	25	EA	1.7500
10011	1-100-021-11	WREN. CRIP	25	EA	1.7500
10012	1-100-021-12	WREN. CRIP	25	EA	1.7500
10013	1-100-022-11	WREN. CRIP	25	EA	1.7500
10014	1-100-022-12	WREN. CRIP	25	EA	1.7500
10015	1-100-023-11	WREN. CRIP	25	EA	1.7500
10016	1-100-023-12	WREN. CRIP	25	EA	1.7500
10017	1-100-024-11	WREN. CRIP	25	EA	1.7500
10018	1-100-024-12	WREN. CRIP	25	EA	1.7500
10019	1-100-025-11	WREN. CRIP	25	EA	1.7500
10020	1-100-025-12	WREN. CRIP	25	EA	1.7500
10021	1-100-026-11	WREN. CRIP	25	EA	1.7500
10022	1-100-026-12	WREN. CRIP	25	EA	1.7500
10023	1-100-027-11	WREN. CRIP	25	EA	1.7500
10024	1-100-027-12	WREN. CRIP	25	EA	1.7500
10025	1-100-028-11	WREN. CRIP	25	EA	1.7500
10026	1-100-028-12	WREN. CRIP	25	EA	1.7500
10027	1-100-029-11	WREN. CRIP	25	EA	1.7500
10028	1-100-029-12	WREN. CRIP	25	EA	1.7500
10029	1-100-030-11	WREN. CRIP	25	EA	1.7500
10030	1-100-030-12	WREN. CRIP	25	EA	1.7500
10031	1-100-031-11	WREN. CRIP	25	EA	1.7500
10032	1-100-031-12	WREN. CRIP	25	EA	1.7500
10033	1-100-032-11	WREN. CRIP	25	EA	1.7500
10034	1-100-032-12	WREN. CRIP	25	EA	1.7500
10035	1-100-033-11	WREN. CRIP	25	EA	1.7500
10036	1-100-033-12	WREN. CRIP	25	EA	1.7500
10037	1-100-034-11	WREN. CRIP	25	EA	1.7500
10038	1-100-034-12	WREN. CRIP	25	EA	1.7500
10039	1-100-035-11	WREN. CRIP	25	EA	1.7500
10040	1-100-035-12	WREN. CRIP	25	EA	1.7500
10041	1-100-036-11	WREN. CRIP	25	EA	1.7500
10042	1-100-036-12	WREN. CRIP	25	EA	1.7500
10043	1-100-037-11	WREN. CRIP	25	EA	1.7500
10044	1-100-037-12	WREN. CRIP	25	EA	1.7500
10045	1-100-038-11	WREN. CRIP	25	EA	1.7500
10046	1-100-038-12	WREN. CRIP	25	EA	1.7500
10047	1-100-039-11	WREN. CRIP	25	EA	1.7500
10048	1-100-039-12	WREN. CRIP	25	EA	1.7500
10049	1-100-040-11	WREN. CRIP	25	EA	1.7500
10050	1-100-040-12	WREN. CRIP	25	EA	1.7500
10051	1-100-041-11	WREN. CRIP	25	EA	1.7500
10052	1-100-041-12	WREN. CRIP	25	EA	1.7500
10053	1-100-042-11	WREN. CRIP	25	EA	1.7500
10054	1-100-042-12	WREN. CRIP	25	EA	1.7500
10055	1-100-043-11	WREN. CRIP	25	EA	1.7500
10056	1-100-043-12	WREN. CRIP	25	EA	1.7500
10057	1-100-044-11	WREN. CRIP	25	EA	1.7500
10058	1-100-044-12	WREN. CRIP	25	EA	1.7500
10059	1-100-045-11	WREN. CRIP	25	EA	1.7500
10060	1-100-045-12	WREN. CRIP	25	EA	1.7500
10061	1-100-046-11	WREN. CRIP	25	EA	1.7500
10062	1-100-046-12	WREN. CRIP	25	EA	1.7500
10063	1-100-047-11	WREN. CRIP	25	EA	1.7500
10064	1-100-047-12	WREN. CRIP	25	EA	1.7500
10065	1-100-048-11	WREN. CRIP	25	EA	1.7500
10066	1-100-048-12	WREN. CRIP	25	EA	1.7500
10067	1-100-049-11	WREN. CRIP	25	EA	1.7500
10068	1-100-049-12	WREN. CRIP	25	EA	1.7500
10069	1-100-050-11	WREN. CRIP	25	EA	1.7500
10070	1-100-050-12	WREN. CRIP	25	EA	1.7500
10071	1-100-051-11	WREN. CRIP	25	EA	1.7500
10072	1-100-051-12	WREN. CRIP	25	EA	1.7500
10073	1-100-052-11	WREN. CRIP	25	EA	1.7500
10074	1-100-052-12	WREN. CRIP	25	EA	1.7500
10075	1-100-053-11	WREN. CRIP	25	EA	1.7500
10076	1-100-053-12	WREN. CRIP	25	EA	1.7500
10077	1-100-054-11	WREN. CRIP	25	EA	1.7500
10078	1-100-054-12	WREN. CRIP	25	EA	1.7500
10079	1-100-055-11	WREN. CRIP	25	EA	1.7500
10080	1-100-055-12	WREN. CRIP	25	EA	1.7500
10081	1-100-056-11	WREN. CRIP	25	EA	1.7500
10082	1-100-056-12	WREN. CRIP	25	EA	1.7500
10083	1-100-057-11	WREN. CRIP	25	EA	1.7500
10084	1-100-057-12	WREN. CRIP	25	EA	1.7500
10085	1-100-058-11	WREN. CRIP	25	EA	1.7500
10086	1-100-058-12	WREN. CRIP	25	EA	1.7500
10087	1-100-059-11	WREN. CRIP	25	EA	1.7500
10088	1-100-059-12	WREN. CRIP	25	EA	1.7500
10089	1-100-060-11	WREN. CRIP	25	EA	1.7500
10090	1-100-060-12	WREN. CRIP	25	EA	1.7500
10091	1-100-061-11	WREN. CRIP	25	EA	1.7500
10092	1-100-061-12	WREN. CRIP	25	EA	1.7500
10093	1-100-062-11	WREN. CRIP	25	EA	1.7500
10094	1-100-062-12	WREN. CRIP	25	EA	1.7500
10095	1-100-063-11	WREN. CRIP	25	EA	1.7500
10096	1-100-063-12	WREN. CRIP	25	EA	1.7500
10097	1-100-064-11	WREN. CRIP	25	EA	1.7500
10098	1-100-064-12	WREN. CRIP	25	EA	1.7500
10099	1-100-065-11	WREN. CRIP	25	EA	1.7500
10100	1-100-065-12	WREN. CRIP	25	EA	1.7500
10101	1-100-066-11	WREN. CRIP	25	EA	1.7500
10102	1-100-066-12	WREN. CRIP	25	EA	1.7500
10103	1-100-067-11	WREN. CRIP	25	EA	1.7500
10104	1-100-067-12	WREN. CRIP	25	EA	1.7500
10105	1-100-068-11	WREN. CRIP	25	EA	1.7500
10106	1-100-068-12	WREN. CRIP	25	EA	1.7500
10107	1-100-069-11	WREN. CRIP	25	EA	1.7500
10108	1-100-069-12	WREN. CRIP	25	EA	1.7500
10109	1-100-070-11	WREN. CRIP	25	EA	1.7500
10110	1-100-070-12	WREN. CRIP	25	EA	1.7500
10111	1-100-071-11	WREN. CRIP	25	EA	1.7500
10112	1-100-071-12	WREN. CRIP	25	EA	1.7500
10113	1-100-072-11	WREN. CRIP	25	EA	1.7500
10114	1-100-072-12	WREN. CRIP	25	EA	1.7500
10115	1-100-073-11	WREN. CRIP	25	EA	1.7500
10116	1-100-073-12	WREN. CRIP	25	EA	1.7500
10117	1-100-074-11	WREN. CRIP	25	EA	1.7500
10118	1-100-074-12	WREN. CRIP	25	EA	1.7500
10119	1-100-075-11	WREN. CRIP	25	EA	1.7500
10120	1-100-075-12	WREN. CRIP	25	EA	1.7500
10121	1-100-076-11	WREN. CRIP	25	EA	1.7500
10122	1-100-076-12	WREN. CRIP	25	EA	1.7500
10123	1-100-077-11	WREN. CRIP	25	EA	1.7500
10124	1-100-077-12	WREN. CRIP	25	EA	1.7500
10125	1-100-078-11	WREN. CRIP	25	EA	1.7500
10126	1-100-078-12	WREN. CRIP	25	EA	1.7500
10127	1-100-079-11	WREN. CRIP	25	EA	1.7500
10128	1-100-079-12	WREN. CRIP	25	EA	1.7500
10129	1-100-080-11	WREN. CRIP	25	EA	1.7500
10130	1-100-080-12	WREN. CRIP	25	EA	1.7500
10131	1-100-081-11	WREN. CRIP	25	EA	1.7500
10132	1-100-081-12	WREN. CRIP	25	EA	1.7500
10133	1-100-082-11	WREN. CRIP	25	EA	1.7500
10134	1-100-082-12	WREN. CRIP	25	EA	1.7500
10135	1-100-083-11	WREN. CRIP	25	EA	1.7500
10136	1-100-083-12	WREN. CRIP	25	EA	1.7500
10137	1-100-084-11	WREN. CRIP	25	EA	1.7500
10138	1-100-084-12	WREN. CRIP	25	EA	1.7500
10139	1-100-085-11	WREN. CRIP	25	EA	1.7500
10140	1-100-085-12	WREN. CRIP	25	EA	1.7500
10141	1-100-086-11	WREN. CRIP	25	EA	1.7500
10142	1-100-086-12	WREN. CRIP	25	EA	1.7500
10143	1-100-087-11	WREN. CRIP	25	EA	1.7500
10144	1-100-087-12	WREN. CRIP	25	EA	1.7500
10145	1-100-088-11	WREN. CRIP	25	EA	1.7500
10146	1-100-088-12	WREN. CRIP	25	EA	1.7500
10147	1-100-089-11	WREN. CRIP	25	EA	1.7500
10148	1-100-089-12	WREN. CRIP	25	EA	1.7500
10149	1-100-090-11	WREN. CRIP	25	EA	1.7500
10150	1-100-090-12	WREN. CRIP	25	EA	1.7500
10151	1-100-091-11	WREN. CRIP	25	EA	1.7500
10152	1-100-091-12	WREN. CRIP	25	EA	1.7500
10153	1-100-092-11	WREN. CRIP	25	EA	1.7500
10154	1-100-092-12	WREN. CRIP	25	EA	1.7500
10155	1-100-093-11	WREN. CRIP	25	EA	1.7500
10156	1-100-093-12	WREN. CRIP	25	EA	1.7500
10157	1-100-094-11	WREN. CRIP	25	EA	1.7500
10158	1-100-094-12	WREN. CRIP	25	EA	1.7500
10159	1-100-095-11	WREN. CRIP	25	EA	1.7500
10160	1-100-095-12	WREN. CRIP	25	EA	1.7500
10161	1-100-096-11	WREN. CRIP	25	EA	1.7500
10162	1-100-096-12	WREN. CRIP	25	EA	1.7500
10163	1-100-097-11	WREN. CRIP	25	EA	1.7500
10164	1-100-097-12	WREN. CRIP	25	EA	1.7500
10165	1-100-098-11	WREN. CRIP	25	EA	1.7500
10166	1-100-098-12	WREN. CRIP	25	EA	1.7500
10167	1-100-099-11	WREN. CRIP	25	EA	1.7500
10168	1-100-099-12	WREN. CRIP	25	EA	1.7500
10169	1-100-100-11	WREN. CRIP	25	EA	1.7500
10170	1-100-100-12	WREN. CRIP	25	EA	1.7500
10171	1-100-101-11	WREN. CRIP	25	EA	1.7500
10172	1-100-101-12	WREN. CRIP	25	EA	1.7500
10173	1-100-102-11	WREN. CRIP	25	EA	1.7500
1					

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 104

[illegible]

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C124	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C172	1-162-921-11	CERAMIC CHIP 33PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
C128	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C173	1-164-155-11	CERAMIC CHIP 75PF 5% 50V (TR400/TR750)	
C131	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C175	1-162-915-11	CERAMIC CHIP 10PF 0.5PF 50V (TR400/TR750)	
C134	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C176	1-162-921-11	CERAMIC CHIP 33PF 5% 50V (TR400/TR750)	
C136	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C177	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C137	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	C178	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C143	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V	C179	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C144	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V	C190	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C145	1-104-852-11	TANTAL. CHIP	22uF 20% 6.3V	C202	1-162-944-11	CERAMIC CHIP 18PF 5% 50V (TR400/TR750)	
C146	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C203	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C147	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C204	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C148	1-162-958-11	CERAMIC CHIP	270PF 5% 50V	C205	1-162-974-11	CERAMIC CHIP 0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
C149	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C206	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C150	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C207	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C151	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C208	1-135-149-21	TANTALUM CHIP 2.2uF 20% 10V	
C152	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C209	1-126-246-11	ELECT CHIP 220uF 20% 4V	
C153	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V	C210	1-162-961-11	CERAMIC CHIP 330PF 10% 50V	
C154	1-162-945-11	CERAMIC CHIP	22PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C211	1-135-091-21	TANTAL. CHIP 1uF 20% 16V	
C155	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR400/TR750)	C212	1-162-995-11	CERAMIC CHIP 0.022uF 50V	
C157	1-162-918-11	CERAMIC CHIP	18PF 5% 50V	C213	1-135-176-21	TANTALUM CHIP 0.68uF 10% 20V	
C158	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C214	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C159	1-162-922-11	CERAMIC CHIP	39PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C215	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C160	1-162-946-11	CERAMIC CHIP	27PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C216	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C161	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V	C217	1-135-091-21	TANTAL. CHIP 1uF 20% 16V	
C163	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C218	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
C164	1-162-942-11	CERAMIC CHIP	12PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C220	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C165	1-162-956-11	CERAMIC CHIP	180PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C221	1-164-005-11	CERAMIC CHIP 0.47uF 25V (TR400/TR750)	
C166	1-162-958-11	CERAMIC CHIP	270PF 5% 50V	C222	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C167	1-162-926-11	CERAMIC CHIP	82PF 5% 50V (TR72/TR80/TR400/TR430/TR750)	C223	1-164-360-11	CERAMIC CHIP 0.1uF 16V	
C167	1-164-382-11	CERAMIC CHIP	91PF 5% 50V (TR42/TR70/TR82/TR550)	C225	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C168	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C226	1-162-926-11	CERAMIC CHIP 82PF 5% 50V	
C169	1-162-949-11	CERAMIC CHIP	47PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C227	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
C170	1-162-915-11	CERAMIC CHIP	10PF 0.5PF 50V (TR400/TR750)	C228	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
C171	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (TR400/TR750)	C229	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
				C230	1-135-180-21	TANTALUM CHIP 3.3uF 20% 6.3V	
				C231	1-164-005-11	CERAMIC CHIP 0.47uF 25V	
				C234	1-162-957-11	CERAMIC CHIP 220PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
				C234	1-164-471-11	CERAMIC CHIP 680PF 5% 50V (TR400/TR750)	
				C235	1-126-207-11	ELECT CHIP 33uF 20% 4V	
				C237	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
				C238	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V	
				C239	1-162-974-11	CERAMIC CHIP 0.01uF 50V	
				C240	1-164-392-11	CERAMIC CHIP 390PF 5% 50V	

Ref. No.	Part No.	Description	QTY	Unit Price	Total Price
C25	1-10-104-11	TAPAL, 1/2"	100	0.10	10.00
C26	1-10-104-12	CHAMIC, 1/2"	100	0.10	10.00
C27	1-10-104-13	CHAMIC, 1/2"	100	0.10	10.00
C28	1-10-104-14	CHAMIC, 1/2"	100	0.10	10.00
C29	1-10-104-15	CHAMIC, 1/2"	100	0.10	10.00
C30	1-10-104-16	CHAMIC, 1/2"	100	0.10	10.00
C31	1-10-104-17	CHAMIC, 1/2"	100	0.10	10.00
C32	1-10-104-18	CHAMIC, 1/2"	100	0.10	10.00
C33	1-10-104-19	CHAMIC, 1/2"	100	0.10	10.00
C34	1-10-104-20	CHAMIC, 1/2"	100	0.10	10.00
C35	1-10-104-21	CHAMIC, 1/2"	100	0.10	10.00
C36	1-10-104-22	CHAMIC, 1/2"	100	0.10	10.00
C37	1-10-104-23	CHAMIC, 1/2"	100	0.10	10.00
C38	1-10-104-24	CHAMIC, 1/2"	100	0.10	10.00
C39	1-10-104-25	CHAMIC, 1/2"	100	0.10	10.00
C40	1-10-104-26	CHAMIC, 1/2"	100	0.10	10.00
C41	1-10-104-27	CHAMIC, 1/2"	100	0.10	10.00
C42	1-10-104-28	CHAMIC, 1/2"	100	0.10	10.00
C43	1-10-104-29	CHAMIC, 1/2"	100	0.10	10.00
C44	1-10-104-30	CHAMIC, 1/2"	100	0.10	10.00
C45	1-10-104-31	CHAMIC, 1/2"	100	0.10	10.00
C46	1-10-104-32	CHAMIC, 1/2"	100	0.10	10.00
C47	1-10-104-33	CHAMIC, 1/2"	100	0.10	10.00
C48	1-10-104-34	CHAMIC, 1/2"	100	0.10	10.00
C49	1-10-104-35	CHAMIC, 1/2"	100	0.10	10.00
C50	1-10-104-36	CHAMIC, 1/2"	100	0.10	10.00
C51	1-10-104-37	CHAMIC, 1/2"	100	0.10	10.00
C52	1-10-104-38	CHAMIC, 1/2"	100	0.10	10.00
C53	1-10-104-39	CHAMIC, 1/2"	100	0.10	10.00
C54	1-10-104-40	CHAMIC, 1/2"	100	0.10	10.00
C55	1-10-104-41	CHAMIC, 1/2"	100	0.10	10.00
C56	1-10-104-42	CHAMIC, 1/2"	100	0.10	10.00
C57	1-10-104-43	CHAMIC, 1/2"	100	0.10	10.00
C58	1-10-104-44	CHAMIC, 1/2"	100	0.10	10.00
C59	1-10-104-45	CHAMIC, 1/2"	100	0.10	10.00
C60	1-10-104-46	CHAMIC, 1/2"	100	0.10	10.00
C61	1-10-104-47	CHAMIC, 1/2"	100	0.10	10.00
C62	1-10-104-48	CHAMIC, 1/2"	100	0.10	10.00
C63	1-10-104-49	CHAMIC, 1/2"	100	0.10	10.00
C64	1-10-104-50	CHAMIC, 1/2"	100	0.10	10.00
C65	1-10-104-51	CHAMIC, 1/2"	100	0.10	10.00
C66	1-10-104-52	CHAMIC, 1/2"	100	0.10	10.00
C67	1-10-104-53	CHAMIC, 1/2"	100	0.10	10.00
C68	1-10-104-54	CHAMIC, 1/2"	100	0.10	10.00
C69	1-10-104-55	CHAMIC, 1/2"	100	0.10	10.00
C70	1-10-104-56	CHAMIC, 1/2"	100	0.10	10.00
C71	1-10-104-57	CHAMIC, 1/2"	100	0.10	10.00
C72	1-10-104-58	CHAMIC, 1/2"	100	0.10	10.00
C73	1-10-104-59	CHAMIC, 1/2"	100	0.10	10.00
C74	1-10-104-60	CHAMIC, 1/2"	100	0.10	10.00
C75	1-10-104-61	CHAMIC, 1/2"	100	0.10	10.00
C76	1-10-104-62	CHAMIC, 1/2"	100	0.10	10.00
C77	1-10-104-63	CHAMIC, 1/2"	100	0.10	10.00
C78	1-10-104-64	CHAMIC, 1/2"	100	0.10	10.00
C79	1-10-104-65	CHAMIC, 1/2"	100	0.10	10.00
C80	1-10-104-66	CHAMIC, 1/2"	100	0.10	10.00
C81	1-10-104-67	CHAMIC, 1/2"	100	0.10	10.00
C82	1-10-104-68	CHAMIC, 1/2"	100	0.10	10.00
C83	1-10-104-69	CHAMIC, 1/2"	100	0.10	10.00
C84	1-10-104-70	CHAMIC, 1/2"	100	0.10	10.00
C85	1-10-104-71	CHAMIC, 1/2"	100	0.10	10.00
C86	1-10-104-72	CHAMIC, 1/2"	100	0.10	10.00
C87	1-10-104-73	CHAMIC, 1/2"	100	0.10	10.00
C88	1-10-104-74	CHAMIC, 1/2"	100	0.10	10.00
C89	1-10-104-75	CHAMIC, 1/2"	100	0.10	10.00
C90	1-10-104-76	CHAMIC, 1/2"	100	0.10	10.00
C91	1-10-104-77	CHAMIC, 1/2"	100	0.10	10.00
C92	1-10-104-78	CHAMIC, 1/2"	100	0.10	10.00
C93	1-10-104-79	CHAMIC, 1/2"	100	0.10	10.00
C94	1-10-104-80	CHAMIC, 1/2"	100	0.10	10.00
C95	1-10-104-81	CHAMIC, 1/2"	100	0.10	10.00
C96	1-10-104-82	CHAMIC, 1/2"	100	0.10	10.00
C97	1-10-104-83	CHAMIC, 1/2"	100	0.10	10.00
C98	1-10-104-84	CHAMIC, 1/2"	100	0.10	10.00
C99	1-10-104-85	CHAMIC, 1/2"	100	0.10	10.00
C100	1-10-104-86	CHAMIC, 1/2"	100	0.10	10.00



Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
C241	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C294	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR400/TR750)
C242	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C295	1-135-180-21	TANTALUM CHIP	3.3uF 20% 6.3V (TR400/TR750)
C243	1-135-091-21	TANTAL. CHIP	1uF 20% 16V	C296	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR400/TR750)
C244	1-162-959-11	CERAMIC CHIP	330PF 5% 50V	C297	1-135-180-21	TANTALUM CHIP	3.3uF 20% 6.3V (TR400/TR750)
C245	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C298	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR400/TR750)
C247	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C299	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)
C248	1-164-217-11	CERAMIC CHIP	150PF 5% 50V (TR400/TR750)	C300	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR400/TR750)
C250	1-164-217-11	CERAMIC CHIP	150PF 5% 50V (TR400/TR750)	C301	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)
C251	1-162-949-11	CERAMIC CHIP	47PF 5% 50V (TR400/TR750)	C302	1-135-180-21	TANTALUM CHIP	3.3uF 20% 6.3V (TR400/TR750)
C251	1-162-956-11	CERAMIC CHIP	180PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C303	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR400/TR750)
C258	1-164-346-11	CERAMIC CHIP	1uF 16V	C304	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR400/TR750)
C262	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C305	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)
C263	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C306	1-162-921-11	CERAMIC CHIP	33PF 5% 50V (TR400/TR750)
C264	1-135-180-21	TANTALUM CHIP	3.3uF 20% 6.3V	C307	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C265	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C310	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V
C266	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C311	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR400/TR750)
C267	1-135-180-21	TANTALUM CHIP	3.3uF 20% 6.3V	C312	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C268	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C319	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C271	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C322	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR42/TR72/TR82/TR430/TR550)
C272	1-135-180-21	TANTALUM CHIP	3.3uF 20% 6.3V	C323	1-164-360-11	CERAMIC CHIP	0.1uF 16V (TR42/TR72/TR82/TR430/TR550)
C273	1-162-974-11	CERAMIC CHIP	0.01uF 50V	C324	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR72/TR82/TR430/TR550)
C274	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C328	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C275	1-162-955-11	CERAMIC CHIP	150PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C331	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C276	1-162-944-11	CERAMIC CHIP	18PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C333	1-162-941-11	CERAMIC CHIP	10PF 0.5PF 50V
C278	1-162-949-11	CERAMIC CHIP	47PF 5% 50V	C334	1-162-935-11	CERAMIC CHIP	4PF 0.25PF 50V
C279	1-164-145-11	CERAMIC CHIP	390PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C500	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C281	1-162-954-11	CERAMIC CHIP	120PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C501	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C282	1-162-927-11	CERAMIC CHIP	100PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C502	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C284	1-162-927-11	CERAMIC CHIP	100PF 5% 50V	C503	1-124-778-00	ELECT CHIP	22uF 20% 6.3V
C285	1-135-318-11	TANTAL. CHIP	33uF 20% 4V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C504	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C286	1-135-259-11	TANTAL. CHIP	10uF 20% 6.3V	C506	1-124-778-00	ELECT CHIP	22uF 20% 6.3V
C287	1-162-949-11	CERAMIC CHIP	47PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C507	1-162-918-11	CERAMIC CHIP	18PF 5% 50V
C289	1-164-360-11	CERAMIC CHIP	0.1uF 16V	C508	1-162-919-11	CERAMIC CHIP	22PF 5% 50V
C290	1-162-974-11	CERAMIC CHIP	0.01uF 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C509	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C291	1-162-949-11	CERAMIC CHIP	47PF 5% 50V (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	C510	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C292	1-164-346-11	CERAMIC CHIP	1uF 16V (TR400/TR750)	C511	1-164-361-11	CERAMIC CHIP	0.047uF 16V

Ref. No.	Part No.	Description	QTY	Unit	Price
100	1-00-000-01	TOTAL	1.00	0.00	0.00
101	1-00-000-02	TOTAL	1.00	0.00	0.00
102	1-00-000-03	TOTAL	1.00	0.00	0.00
103	1-00-000-04	TOTAL	1.00	0.00	0.00
104	1-00-000-05	TOTAL	1.00	0.00	0.00
105	1-00-000-06	TOTAL	1.00	0.00	0.00
106	1-00-000-07	TOTAL	1.00	0.00	0.00
107	1-00-000-08	TOTAL	1.00	0.00	0.00
108	1-00-000-09	TOTAL	1.00	0.00	0.00
109	1-00-000-10	TOTAL	1.00	0.00	0.00
110	1-00-000-11	TOTAL	1.00	0.00	0.00
111	1-00-000-12	TOTAL	1.00	0.00	0.00
112	1-00-000-13	TOTAL	1.00	0.00	0.00
113	1-00-000-14	TOTAL	1.00	0.00	0.00
114	1-00-000-15	TOTAL	1.00	0.00	0.00
115	1-00-000-16	TOTAL	1.00	0.00	0.00
116	1-00-000-17	TOTAL	1.00	0.00	0.00
117	1-00-000-18	TOTAL	1.00	0.00	0.00
118	1-00-000-19	TOTAL	1.00	0.00	0.00
119	1-00-000-20	TOTAL	1.00	0.00	0.00
120	1-00-000-21	TOTAL	1.00	0.00	0.00
121	1-00-000-22	TOTAL	1.00	0.00	0.00
122	1-00-000-23	TOTAL	1.00	0.00	0.00
123	1-00-000-24	TOTAL	1.00	0.00	0.00
124	1-00-000-25	TOTAL	1.00	0.00	0.00
125	1-00-000-26	TOTAL	1.00	0.00	0.00
126	1-00-000-27	TOTAL	1.00	0.00	0.00
127	1-00-000-28	TOTAL	1.00	0.00	0.00
128	1-00-000-29	TOTAL	1.00	0.00	0.00
129	1-00-000-30	TOTAL	1.00	0.00	0.00
130	1-00-000-31	TOTAL	1.00	0.00	0.00
131	1-00-000-32	TOTAL	1.00	0.00	0.00
132	1-00-000-33	TOTAL	1.00	0.00	0.00
133	1-00-000-34	TOTAL	1.00	0.00	0.00
134	1-00-000-35	TOTAL	1.00	0.00	0.00
135	1-00-000-36	TOTAL	1.00	0.00	0.00
136	1-00-000-37	TOTAL	1.00	0.00	0.00
137	1-00-000-38	TOTAL	1.00	0.00	0.00
138	1-00-000-39	TOTAL	1.00	0.00	0.00
139	1-00-000-40	TOTAL	1.00	0.00	0.00
140	1-00-000-41	TOTAL	1.00	0.00	0.00
141	1-00-000-42	TOTAL	1.00	0.00	0.00
142	1-00-000-43	TOTAL	1.00	0.00	0.00
143	1-00-000-44	TOTAL	1.00	0.00	0.00
144	1-00-000-45	TOTAL	1.00	0.00	0.00
145	1-00-000-46	TOTAL	1.00	0.00	0.00
146	1-00-000-47	TOTAL	1.00	0.00	0.00
147	1-00-000-48	TOTAL	1.00	0.00	0.00
148	1-00-000-49	TOTAL	1.00	0.00	0.00
149	1-00-000-50	TOTAL	1.00	0.00	0.00
150	1-00-000-51	TOTAL	1.00	0.00	0.00
151	1-00-000-52	TOTAL	1.00	0.00	0.00
152	1-00-000-53	TOTAL	1.00	0.00	0.00
153	1-00-000-54	TOTAL	1.00	0.00	0.00
154	1-00-000-55	TOTAL	1.00	0.00	0.00
155	1-00-000-56	TOTAL	1.00	0.00	0.00
156	1-00-000-57	TOTAL	1.00	0.00	0.00
157	1-00-000-58	TOTAL	1.00	0.00	0.00
158	1-00-000-59	TOTAL	1.00	0.00	0.00
159	1-00-000-60	TOTAL	1.00	0.00	0.00
160	1-00-000-61	TOTAL	1.00	0.00	0.00
161	1-00-000-62	TOTAL	1.00	0.00	0.00
162	1-00-000-63	TOTAL	1.00	0.00	0.00
163	1-00-000-64	TOTAL	1.00	0.00	0.00
164	1-00-000-65	TOTAL	1.00	0.00	0.00
165	1-00-000-66	TOTAL	1.00	0.00	0.00
166	1-00-000-67	TOTAL	1.00	0.00	0.00
167	1-00-000-68	TOTAL	1.00	0.00	0.00
168	1-00-000-69	TOTAL	1.00	0.00	0.00
169	1-00-000-70	TOTAL	1.00	0.00	0.00
170	1-00-000-71	TOTAL	1.00	0.00	0.00
171	1-00-000-72	TOTAL	1.00	0.00	0.00
172	1-00-000-73	TOTAL	1.00	0.00	0.00
173	1-00-000-74	TOTAL	1.00	0.00	0.00
174	1-00-000-75	TOTAL	1.00	0.00	0.00
175	1-00-000-76	TOTAL	1.00	0.00	0.00
176	1-00-000-77	TOTAL	1.00	0.00	0.00
177	1-00-000-78	TOTAL	1.00	0.00	0.00
178	1-00-000-79	TOTAL	1.00	0.00	0.00
179	1-00-000-80	TOTAL	1.00	0.00	0.00
180	1-00-000-81	TOTAL	1.00	0.00	0.00
181	1-00-000-82	TOTAL	1.00	0.00	0.00
182	1-00-000-83	TOTAL	1.00	0.00	0.00
183	1-00-000-84	TOTAL	1.00	0.00	0.00
184	1-00-000-85	TOTAL	1.00	0.00	0.00
185	1-00-000-86	TOTAL	1.00	0.00	0.00
186	1-00-000-87	TOTAL	1.00	0.00	0.00
187	1-00-000-88	TOTAL	1.00	0.00	0.00
188	1-00-000-89	TOTAL	1.00	0.00	0.00
189	1-00-000-90	TOTAL	1.00	0.00	0.00
190	1-00-000-91	TOTAL	1.00	0.00	0.00
191	1-00-000-92	TOTAL	1.00	0.00	0.00
192	1-00-000-93	TOTAL	1.00	0.00	0.00
193	1-00-000-94	TOTAL	1.00	0.00	0.00
194	1-00-000-95	TOTAL	1.00	0.00	0.00
195	1-00-000-96	TOTAL	1.00	0.00	0.00
196	1-00-000-97	TOTAL	1.00	0.00	0.00
197	1-00-000-98	TOTAL	1.00	0.00	0.00
198	1-00-000-99	TOTAL	1.00	0.00	0.00
199	1-00-000-100	TOTAL	1.00	0.00	0.00

NAME	Ext. No.	DESCRIPTION	Amount
1981	1-100-01-01	CRANIC EXP	1.50
1982	1-100-01-02	TOTALS EXP	1.50
1983	1-100-01-03	CRANIC EXP	1.50
1984	1-100-01-04	TOTALS EXP	1.50
1985	1-100-01-05	CRANIC EXP	1.50
1986	1-100-01-06	TOTALS EXP	1.50
1987	1-100-01-07	CRANIC EXP	1.50
1988	1-100-01-08	TOTALS EXP	1.50
1989	1-100-01-09	CRANIC EXP	1.50
1990	1-100-01-10	TOTALS EXP	1.50
1991	1-100-01-11	CRANIC EXP	1.50
1992	1-100-01-12	TOTALS EXP	1.50
1993	1-100-01-13	CRANIC EXP	1.50
1994	1-100-01-14	TOTALS EXP	1.50
1995	1-100-01-15	CRANIC EXP	1.50
1996	1-100-01-16	TOTALS EXP	1.50
1997	1-100-01-17	CRANIC EXP	1.50
1998	1-100-01-18	TOTALS EXP	1.50
1999	1-100-01-19	CRANIC EXP	1.50
2000	1-100-01-20	TOTALS EXP	1.50
2001	1-100-01-21	CRANIC EXP	1.50
2002	1-100-01-22	TOTALS EXP	1.50
2003	1-100-01-23	CRANIC EXP	1.50
2004	1-100-01-24	TOTALS EXP	1.50
2005	1-100-01-25	CRANIC EXP	1.50
2006	1-100-01-26	TOTALS EXP	1.50
2007	1-100-01-27	CRANIC EXP	1.50
2008	1-100-01-28	TOTALS EXP	1.50
2009	1-100-01-29	CRANIC EXP	1.50
2010	1-100-01-30	TOTALS EXP	1.50
2011	1-100-01-31	CRANIC EXP	1.50
2012	1-100-01-32	TOTALS EXP	1.50
2013	1-100-01-33	CRANIC EXP	1.50
2014	1-100-01-34	TOTALS EXP	1.50
2015	1-100-01-35	CRANIC EXP	1.50
2016	1-100-01-36	TOTALS EXP	1.50
2017	1-100-01-37	CRANIC EXP	1.50
2018	1-100-01-38	TOTALS EXP	1.50
2019	1-100-01-39	CRANIC EXP	1.50
2020	1-100-01-40	TOTALS EXP	1.50
2021	1-100-01-41	CRANIC EXP	1.50
2022	1-100-01-42	TOTALS EXP	1.50
2023	1-100-01-43	CRANIC EXP	1.50
2024	1-100-01-44	TOTALS EXP	1.50
2025	1-100-01-45	CRANIC EXP	1.50
2026	1-100-01-46	TOTALS EXP	1.50
2027	1-100-01-47	CRANIC EXP	1.50
2028	1-100-01-48	TOTALS EXP	1.50
2029	1-100-01-49	CRANIC EXP	1.50
2030	1-100-01-50	TOTALS EXP	1.50
2031	1-100-01-51	CRANIC EXP	1.50
2032	1-100-01-52	TOTALS EXP	1.50
2033	1-100-01-53	CRANIC EXP	1.50
2034	1-100-01-54	TOTALS EXP	1.50
2035	1-100-01-55	CRANIC EXP	1.50
2036	1-100-01-56	TOTALS EXP	1.50
2037	1-100-01-57	CRANIC EXP	1.50
2038	1-100-01-58	TOTALS EXP	1.50
2039	1-100-01-59	CRANIC EXP	1.50
2040	1-100-01-60	TOTALS EXP	1.50
2041	1-100-01-61	CRANIC EXP	1.50
2042	1-100-01-62	TOTALS EXP	1.50
2043	1-100-01-63	CRANIC EXP	1.50
2044	1-100-01-64	TOTALS EXP	1.50
2045	1-100-01-65	CRANIC EXP	1.50
2046	1-100-01-66	TOTALS EXP	1.50
2047	1-100-01-67	CRANIC EXP	1.50
2048	1-100-01-68	TOTALS EXP	1.50
2049	1-100-01-69	CRANIC EXP	1.50
2050	1-100-01-70	TOTALS EXP	1.50
2051	1-100-01-71	CRANIC EXP	1.50
2052	1-100-01-72	TOTALS EXP	1.50
2053	1-100-01-73	CRANIC EXP	1.50
2054	1-100-01-74	TOTALS EXP	1.50
2055	1-100-01-75	CRANIC EXP	1.50
2056	1-100-01-76	TOTALS EXP	1.50
2057	1-100-01-77	CRANIC EXP	1.50
2058	1-100-01-78	TOTALS EXP	1.50
2059	1-100-01-79	CRANIC EXP	1.50
2060	1-100-01-80	TOTALS EXP	1.50
2061	1-100-01-81	CRANIC EXP	1.50
2062	1-100-01-82	TOTALS EXP	1.50
2063	1-100-01-83	CRANIC EXP	1.50
2064	1-100-01-84	TOTALS EXP	1.50
2065	1-100-01-85	CRANIC EXP	1.50
2066	1-100-01-86	TOTALS EXP	1.50
2067	1-100-01-87	CRANIC EXP	1.50
2068	1-100-01-88	TOTALS EXP	1.50
2069	1-100-01-89	CRANIC EXP	1.50
2070	1-100-01-90	TOTALS EXP	1.50
2071	1-100-01-91	CRANIC EXP	1.50
2072	1-100-01-92	TOTALS EXP	1.50
2073	1-100-01-93	CRANIC EXP	1.50
2074	1-100-01-94	TOTALS EXP	1.50
2075	1-100-01-95	CRANIC EXP	1.50
2076	1-100-01-96	TOTALS EXP	1.50
2077	1-100-01-97	CRANIC EXP	1.50
2078	1-100-01-98	TOTALS EXP	1.50
2079	1-100-01-99	CRANIC EXP	1.50
2080	1-100-01-100	TOTALS EXP	1.50

Ref.No.	Part No.	Description		Remark	Ref.No.	Part No.	Description		Remark
C512	1-164-360-11	CERAMIC CHIP	0. 1uF	16V	C951	1-164-156-11	CERAMIC CHIP	0. 1uF	25V
C513	1-164-361-11	CERAMIC CHIP	0. 047uF	16V	C952	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V
C514	1-162-974-11	CERAMIC CHIP	0. 01uF	50V	C953	1-126-205-11	ELECT CHIP	47uF	20% 6. 3V
C515	1-162-974-11	CERAMIC CHIP	0. 01uF	50V	C955	1-162-974-11	CERAMIC CHIP	0. 01uF	50V
C516	1-164-361-11	CERAMIC CHIP	0. 047uF	16V	C959	1-164-156-11	CERAMIC CHIP	0. 1uF	25V
C518	1-164-004-11	CERAMIC CHIP	0. 1uF	10% 25V			(TR42/TR72/TR82/TR430/TR550)		
C519	1-164-346-11	CERAMIC CHIP	1uF	16V	C961	1-164-346-11	CERAMIC CHIP	1uF	16V
C521	1-164-004-11	CERAMIC CHIP	0. 1uF	10% 25V			(TR42/TR72/TR82/TR430/TR550)		
C522	1-164-361-11	CERAMIC CHIP	0. 047uF	16V	C1251	1-164-156-11	CERAMIC CHIP	0. 1uF	25V
C523	1-164-492-11	CERAMIC CHIP	0. 15uF	10% 16V			(TR70/TR80/TR400/TR750)		
C524	1-164-492-11	CERAMIC CHIP	0. 15uF	10% 16V	C1252	1-164-505-11	CERAMIC CHIP	2. 2uF	16V
C526	1-164-227-11	CERAMIC CHIP	0. 022uF	10% 25V			(TR70/TR80/TR400/TR750)		
C527	1-164-004-11	CERAMIC CHIP	0. 1uF	10% 25V	C1254	1-162-970-11	CERAMIC CHIP	0. 01uF	10% 25V
C528	1-164-004-11	CERAMIC CHIP	0. 1uF	10% 25V			(TR400/TR750)		
C529	1-164-677-11	CERAMIC CHIP	0. 033uF	10% 16V	C1255	1-164-005-11	CERAMIC CHIP	0. 47uF	25V
C530	1-162-970-11	CERAMIC CHIP	0. 01uF	10% 25V			(TR400/TR750)		
C531	1-162-970-11	CERAMIC CHIP	0. 01uF	10% 25V	C1256	1-164-005-11	CERAMIC CHIP	0. 47uF	25V
C532	1-162-970-11	CERAMIC CHIP	0. 01uF	10% 25V			(TR70/TR80/TR400/TR750)		
C533	1-162-964-11	CERAMIC CHIP	0. 001uF	10% 50V	C1257	1-126-246-11	ELECT CHIP	220uF	20% 4V
C534	1-162-964-11	CERAMIC CHIP	0. 001uF	10% 50V			(TR400/TR750)		
C535	1-162-969-11	CERAMIC CHIP	0. 0068uF	10% 25V	C1258	1-135-149-21	TANTALUM CHIP	2. 2uF	20% 10V
C536	1-162-969-11	CERAMIC CHIP	0. 0068uF	10% 25V			(TR400/TR750)		
C537	1-164-360-11	CERAMIC CHIP	0. 1uF	16V	C1260	1-162-970-11	CERAMIC CHIP	0. 01uF	10% 25V
C538	1-162-995-11	CERAMIC CHIP	0. 022uF	50V			(TR400/TR750)		
C539	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V	C1261	1-164-156-11	CERAMIC CHIP	0. 1uF	25V
C540	1-162-913-11	CERAMIC CHIP	8PF	0. 5PF 50V			(TR400/TR750)		
C541	1-164-360-11	CERAMIC CHIP	0. 1uF	16V	C1262	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V
C543	1-162-913-11	CERAMIC CHIP	8PF	0. 5PF 50V			(TR400/TR750)		
C544	1-162-974-11	CERAMIC CHIP	0. 01uF	50V	C1263	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V
C545	1-162-974-11	CERAMIC CHIP	0. 01uF	50V			(TR70/TR80/TR400/TR750)		
C547	1-164-360-11	CERAMIC CHIP	0. 1uF	16V	C1264	1-164-156-11	CERAMIC CHIP	0. 1uF	25V
C548	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V			(TR70/TR80/TR400/TR750)		
C549	1-162-995-11	CERAMIC CHIP	0. 022uF	50V	C1268	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V
C550	1-128-530-11	ELECT CHIP	33uF	20% 10V			(TR70/TR80/TR400/TR750)		
C552	1-164-362-11	CERAMIC CHIP	470PF	5% 50V	C1274	1-164-005-11	CERAMIC CHIP	0. 47uF	25V
C559	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V			(TR400/TR750)		
C560	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V	C1275	1-162-945-11	CERAMIC CHIP	22PF	5% 50V
C561	1-128-004-11	ELECT CHIP	10uF	20% 16V			(TR400/TR750)		
C562	1-162-974-11	CERAMIC CHIP	0. 01uF	50V	< CONNECTOR >				
C563	1-164-816-11	CERAMIC CHIP	220PF	2% 50V	CN101	1-691-492-21	CONNECTOR, FFC/FPC	13P	
C564	1-164-816-11	CERAMIC CHIP	220PF	2% 50V	CN102	1-580-789-11	PIN, CONNECTOR (SMD)	6P	
C565	1-162-995-11	CERAMIC CHIP	0. 022uF	50V	CN201	1-573-353-11	CONNECTOR, FFC/FPC	13P	
C566	1-162-995-11	CERAMIC CHIP	0. 022uF	50V	CN202	1-691-536-11	CONNECTOR, BOARD TO BOARD	24P	
C567	1-164-173-11	CERAMIC CHIP	0. 0039uF	10% 50V			(TR42/TR70/TR82/TR550)		
C568	1-162-974-11	CERAMIC CHIP	0. 01uF	50V	* CN202	1-691-929-11	CONNECTOR, BOARD TO BOARD	34P	
C569	1-162-974-11	CERAMIC CHIP	0. 01uF	50V			(TR72/TR80/TR400/TR430/TR750)		
C570	1-165-176-11	CERAMIC CHIP	0. 047uF	10% 16V	* CN203	1-764-396-21	CONNECTOR, BOARD TO BOARD	42P	
C571	1-164-004-11	CERAMIC CHIP	0. 1uF	10% 25V	* CN205	1-573-313-11	CONNECTOR, BOARD TO BOARD	26P	
C572	1-135-259-11	TANTAL. CHIP	10uF	20% 6. 3V			(TR400/TR750)		
C573	1-162-909-11	CERAMIC CHIP	4PF	0. 25PF 50V	CN206	1-573-923-21	CONNECTOR, FFC/FPC (ZIF)	14P	
					CN501	1-691-388-11	CONNECTOR, FFC/FPC (ZIF)	24P	
							(TR400/TR750)		
					* CN502	1-764-708-11	CONNECTOR, FFC/FPC (LIF)	9P	



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* CN503	1-764-717-11	CONNECTOR, FFC/FPC (LIF) 18P				< COIL >	
CN504	1-695-325-11	CONNECTOR, BOARD TO BOARD 42P		L102	1-412-066-21	INDUCTOR CHIP 220uH	
* CN505	1-764-397-21	CONNECTOR, BOARD TO BOARD 42P		L103	1-412-066-21	INDUCTOR CHIP 220uH	
		< DIODE >		L104	1-412-951-11	INDUCTOR 10uH	
D101	8-719-800-76	DIODE 1SS226 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		L105	1-412-066-21	INDUCTOR CHIP 220uH	
D102	8-719-404-49	DIODE MA111		L108	1-412-060-11	INDUCTOR CHIP 22uH	
D201	8-719-027-50	DIODE MA142WK		L109	1-412-957-11	INDUCTOR 33uH	
D204	8-719-027-50	DIODE MA142WK		L110	1-410-657-21	INDUCTOR CHIP 180uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
D208	8-719-027-50	DIODE MA142WK		L111	1-412-950-11	INDUCTOR 8.2uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
D216	8-719-027-50	DIODE MA142WK		L112	1-412-280-31	INDUCTOR 330uH	
D217	8-719-404-49	DIODE MA111		L113	1-412-957-11	INDUCTOR 33uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
D218	8-719-800-76	DIODE 1SS226		L114	1-412-282-41	INDUCTOR 470uH	
D321	8-719-045-87	DIODE MA4Z082WA		L115	1-412-280-31	INDUCTOR 330uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
D323	8-719-017-25	DIODE 02DZ13-TPH3 (TR400/TR750)		L116	1-410-657-21	INDUCTOR CHIP 180uH	
D324	8-719-017-25	DIODE 02DZ13-TPH3 (TR400/TR750)		L118	1-410-655-31	INDUCTOR CHIP 120uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
△D501	8-719-421-27	DIODE MA728		L119	1-412-953-11	INDUCTOR 15uH (TR400/TR750)	
D504	8-719-404-49	DIODE MA111		L120	1-412-951-11	INDUCTOR 10uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
D505	8-719-404-49	DIODE MA111		L121	1-412-951-11	INDUCTOR 10uH (TR400/TR750)	
D1251	8-719-027-50	DIODE MA142WK (TR400/TR750)		L122	1-412-058-11	INDUCTOR CHIP 10uH	
D1252	8-719-027-50	DIODE MA142WK (TR400/TR750)		L123	1-412-949-21	INDUCTOR 6.8uH (TR400/TR750)	
D1253	8-719-045-87	DIODE MA4Z082WA (TR400/TR750)		L201	1-412-963-11	INDUCTOR 100uH (TR400/TR750)	
D1254	8-719-045-87	DIODE MA4Z082WA (TR400/TR750)		L202	1-414-078-11	INDUCTOR 10uH	
D1255	8-719-017-25	DIODE 02DZ13-TPH3 (TR400/TR750)		L203	1-412-955-11	INDUCTOR 22uH	
		< FILTER >		L204	1-412-963-11	INDUCTOR 100uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
FL201	1-236-757-21	FILTER, LOW PASS (C)		L207	1-412-945-11	INDUCTOR 3.3uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
FL202	1-236-773-21	FILTER, LOW PASS (Y) (TR400/TR750)		L209	1-412-960-21	INDUCTOR 56uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
		< IC >		L213	1-412-953-11	INDUCTOR 15uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
IC102	8-752-069-78	IC CXA1704R		L214	1-412-962-11	INDUCTOR 82uH (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
IC201	8-752-068-58	IC CXA1700R (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		L500	1-414-078-11	INDUCTOR 10uH	
IC201	8-752-069-22	IC CXA1810R (TR400/TR750)		L501	1-414-078-11	INDUCTOR 10uH	
IC203	8-752-351-22	IC CXL5502N		L502	1-414-072-11	INDUCTOR 1uH	
IC204	8-752-351-22	IC CXL5502N (TR400/TR750)		L503	1-412-961-11	INDUCTOR 68uH	
IC205	8-752-053-21	IC CXA1211M		L504	1-414-078-11	INDUCTOR 10uH	
IC207	8-759-031-58	IC SCTSU04F (TR400/TR750)		L506	1-414-078-11	INDUCTOR 10uH	
IC208	8-759-710-07	IC NJM2234M (TR42/TR72/TR82/TR430/TR550)		L951	1-414-078-11	INDUCTOR 10uH	
IC251	8-752-069-60	IC CXA1812Q-T4 (TR70/TR80/TR400/TR750)		L952	1-414-072-11	INDUCTOR 1uH	
IC501	8-759-044-78	IC AK6420F-E1		L1251	1-414-078-11	INDUCTOR 10uH (TR400/TR750)	
IC502	8-759-197-68	IC S-8423DFT		L1252	1-414-078-11	INDUCTOR 10uH (TR70/TR80/TR400/TR750)	
IC503	8-759-267-67	IC MB89098PFV-G-107-BND		L1253	1-412-963-11	INDUCTOR 100uH (TR400/TR750)	
IC505	8-752-851-37	IC CXP87132-009R					
IC506	8-759-169-11	IC CXA1575M-E2					
IC508	8-759-249-80	IC MB4470PFQ-G-BND-ER					
IC951	8-759-169-02	IC MB88344BPFV-G-BND-ER					

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< IC LINK >							
△PS500	1-576-122-21	LINK, IC CCP2E10 0.4A		Q232	8-729-420-24	TRANSISTOR 2SB1218A (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
△PS501	1-576-122-21	LINK, IC CCP2E10 0.4A		Q234	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
< TRANSISTOR >				Q235	8-729-420-24	TRANSISTOR 2SB1218A	
Q101	8-729-905-23	TRANSISTOR 2SA1576		Q236	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q102	8-729-420-24	TRANSISTOR 2SB1218A		Q237	8-729-402-81	TRANSISTOR XN4501	
Q103	8-729-216-22	TRANSISTOR 2SA1162		Q238	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q104	8-729-230-63	TRANSISTOR 2SC4116		Q240	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q105	8-729-402-42	TRANSISTOR UN5213		Q242	8-729-420-24	TRANSISTOR 2SB1218A (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q106	8-729-402-42	TRANSISTOR UN5213		Q243	8-729-402-42	TRANSISTOR UN5213 (TR400/TR750)	
Q109	8-729-230-63	TRANSISTOR 2SC4116		Q244	8-729-402-42	TRANSISTOR UN5213	
Q111	8-729-015-74	TRANSISTOR UN5111 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		Q245	8-729-403-35	TRANSISTOR UN5113 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q112	8-729-117-73	TRANSISTOR 2SC4178 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		Q246	8-729-402-81	TRANSISTOR XN4501 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q113	8-729-420-24	TRANSISTOR 2SB1218A (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		Q247	8-729-402-42	TRANSISTOR UN5213 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q114	8-729-230-63	TRANSISTOR 2SC4116		Q248	8-729-420-24	TRANSISTOR 2SB1218A (TR400/TR750)	
Q115	8-729-012-50	TRANSISTOR 2SC4400 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		Q249	8-729-230-63	TRANSISTOR 2SC4116 (TR400/TR750)	
Q116	8-729-012-50	TRANSISTOR 2SC4400 (TR400/TR750)		Q253	8-729-025-16	TRANSISTOR UN511D (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q117	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		Q254	8-729-403-35	TRANSISTOR UN5113	
Q118	8-729-420-24	TRANSISTOR 2SB1218A (TR400/TR750)		Q255	8-729-230-63	TRANSISTOR 2SC4116	
Q119	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		Q256	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q120	8-729-402-42	TRANSISTOR UN5213 (TR400/TR750)		Q257	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q121	8-729-012-50	TRANSISTOR 2SC4400 (TR400/TR750)		Q258	8-729-420-24	TRANSISTOR 2SB1218A	
Q124	8-729-230-63	TRANSISTOR 2SC4116 (TR400/TR750)		Q259	8-729-230-63	TRANSISTOR 2SC4116	
Q125	8-729-402-42	TRANSISTOR UN5213 (TR400/TR750)		Q260	8-729-230-63	TRANSISTOR 2SC4116	
Q126	8-729-230-63	TRANSISTOR 2SC4116		Q261	8-729-230-63	TRANSISTOR 2SC4116 (TR42/TR72/TR82/TR430/TR550)	
Q129	8-729-230-63	TRANSISTOR 2SC4116		Q265	8-729-823-16	TRANSISTOR 2SC4555 (TR400/TR750)	
Q132	8-729-230-63	TRANSISTOR 2SC4116		Q266	8-729-402-42	TRANSISTOR UN5213 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q133	8-729-012-50	TRANSISTOR 2SC4400		Q267	8-729-230-63	TRANSISTOR 2SC4116	
Q134	8-729-402-42	TRANSISTOR UN5213		Q500	8-729-420-24	TRANSISTOR 2SB1218A (TR72/TR80/TR400/TR430/TR750)	
Q135	8-729-402-42	TRANSISTOR UN5213		Q501	8-729-403-27	TRANSISTOR XN4401	
Q202	8-729-420-24	TRANSISTOR 2SB1218A		Q502	8-729-120-28	TRANSISTOR 2SC1623	
Q204	8-729-402-42	TRANSISTOR UN5213		Q503	8-729-402-81	TRANSISTOR XN4501	
Q216	8-729-402-42	TRANSISTOR UN5213		Q504	8-729-120-28	TRANSISTOR 2SC1623	
Q217	8-729-420-12	TRANSISTOR XN4213 (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		Q506	8-729-402-42	TRANSISTOR UN5213	
Q219	8-729-230-63	TRANSISTOR 2SC4116		Q507	8-729-120-28	TRANSISTOR 2SC1623	
Q221	8-729-013-15	TRANSISTOR 2SC4909 (TR400/TR750)		Q951	8-729-101-07	TRANSISTOR 2SB798	
Q222	8-729-403-35	TRANSISTOR UN5113 (TR400/TR750)		Q952	8-729-230-63	TRANSISTOR 2SC4116	
Q223	8-729-013-15	TRANSISTOR 2SC4909 (TR400/TR750)		Q956	8-729-230-63	TRANSISTOR 2SC4116	
Q224	8-729-402-42	TRANSISTOR UN5213 (TR400/TR750)					
Q225	8-729-015-76	TRANSISTOR UN5211					
Q226	8-729-807-86	TRANSISTOR 2SB1295					
Q227	8-729-402-42	TRANSISTOR UN5213					
Q228	8-729-807-86	TRANSISTOR 2SB1295					

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Ref No. Prev No. Description

Reviz

1 of 1,000 1

J2700 1-79-121-01 LINE, 17' SPAN 5.4

J2701 1-79-121-02 LINE, 17' SPAN 5.4

1 TENSION

J27 1-79-121-03 TENSION 50.1.0

J28 1-79-121-04 TENSION 50.1.0

J29 1-79-121-05 TENSION 50.1.0

J30 1-79-121-06 TENSION 50.1.0

J31 1-79-121-07 TENSION 50.1.0

J32 1-79-121-08 TENSION 50.1.0

J33 1-79-121-09 TENSION 50.1.0

J34 1-79-121-10 TENSION 50.1.0

J35 1-79-121-11 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J36 1-79-121-12 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J37 1-79-121-13 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J38 1-79-121-14 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J39 1-79-121-15 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J40 1-79-121-16 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J41 1-79-121-17 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J42 1-79-121-18 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J43 1-79-121-19 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J44 1-79-121-20 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J45 1-79-121-21 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J46 1-79-121-22 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J47 1-79-121-23 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J48 1-79-121-24 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J49 1-79-121-25 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J50 1-79-121-26 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J51 1-79-121-27 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J52 1-79-121-28 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J53 1-79-121-29 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J54 1-79-121-30 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J55 1-79-121-31 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J56 1-79-121-32 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J57 1-79-121-33 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J58 1-79-121-34 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J59 1-79-121-35 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J60 1-79-121-36 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J61 1-79-121-37 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J62 1-79-121-38 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J63 1-79-121-39 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J64 1-79-121-40 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J65 1-79-121-41 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J66 1-79-121-42 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J67 1-79-121-43 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J68 1-79-121-44 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J69 1-79-121-45 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J70 1-79-121-46 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J71 1-79-121-47 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J72 1-79-121-48 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J73 1-79-121-49 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

J74 1-79-121-50 TENSION 50.1.0 (TALL, TALL, TALL, TALL, TALL, TALL)

Ref No. Prev No. Description

Reviz

J274 1-79-121-51 TENSION 50.1.0

J275 1-79-121-52 TENSION 50.1.0

J276 1-79-121-53 TENSION 50.1.0

J277 1-79-121-54 TENSION 50.1.0

J278 1-79-121-55 TENSION 50.1.0

J279 1-79-121-56 TENSION 50.1.0

J280 1-79-121-57 TENSION 50.1.0

J281 1-79-121-58 TENSION 50.1.0

J282 1-79-121-59 TENSION 50.1.0

J283 1-79-121-60 TENSION 50.1.0

J284 1-79-121-61 TENSION 50.1.0

J285 1-79-121-62 TENSION 50.1.0

J286 1-79-121-63 TENSION 50.1.0

J287 1-79-121-64 TENSION 50.1.0

J288 1-79-121-65 TENSION 50.1.0

J289 1-79-121-66 TENSION 50.1.0

J290 1-79-121-67 TENSION 50.1.0

J291 1-79-121-68 TENSION 50.1.0

J292 1-79-121-69 TENSION 50.1.0

J293 1-79-121-70 TENSION 50.1.0

J294 1-79-121-71 TENSION 50.1.0

J295 1-79-121-72 TENSION 50.1.0

J296 1-79-121-73 TENSION 50.1.0

J297 1-79-121-74 TENSION 50.1.0

J298 1-79-121-75 TENSION 50.1.0

J299 1-79-121-76 TENSION 50.1.0

J300 1-79-121-77 TENSION 50.1.0

J301 1-79-121-78 TENSION 50.1.0

J302 1-79-121-79 TENSION 50.1.0

J303 1-79-121-80 TENSION 50.1.0

J304 1-79-121-81 TENSION 50.1.0

J305 1-79-121-82 TENSION 50.1.0

J306 1-79-121-83 TENSION 50.1.0

J307 1-79-121-84 TENSION 50.1.0

J308 1-79-121-85 TENSION 50.1.0

J309 1-79-121-86 TENSION 50.1.0

J310 1-79-121-87 TENSION 50.1.0

J311 1-79-121-88 TENSION 50.1.0

J312 1-79-121-89 TENSION 50.1.0

J313 1-79-121-90 TENSION 50.1.0

J314 1-79-121-91 TENSION 50.1.0

J315 1-79-121-92 TENSION 50.1.0

J316 1-79-121-93 TENSION 50.1.0

J317 1-79-121-94 TENSION 50.1.0

J318 1-79-121-95 TENSION 50.1.0

J319 1-79-121-96 TENSION 50.1.0

J320 1-79-121-97 TENSION 50.1.0

J321 1-79-121-98 TENSION 50.1.0

J322 1-79-121-99 TENSION 50.1.0

J323 1-79-121-100 TENSION 50.1.0

J324 1-79-121-101 TENSION 50.1.0

J325 1-79-121-102 TENSION 50.1.0

J326 1-79-121-103 TENSION 50.1.0

J327 1-79-121-104 TENSION 50.1.0

J328 1-79-121-105 TENSION 50.1.0

J329 1-79-121-106 TENSION 50.1.0

J330 1-79-121-107 TENSION 50.1.0

J331 1-79-121-108 TENSION 50.1.0

J332 1-79-121-109 TENSION 50.1.0

J333 1-79-121-110 TENSION 50.1.0

The company shall be paid  
 1/2 of the cost of the work  
 done by the contractor  
 before the work is  
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 completed.



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q958	8-729-230-63	TRANSISTOR	2SC4116 (TR42/TR72/TR82/TR430/TR550)	R130	1-216-823-11	METAL CHIP 1.5K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q960	8-729-230-63	TRANSISTOR	2SC4116 (TR42/TR72/TR82/TR430/TR550)	R132	1-216-823-11	METAL CHIP 1.5K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q1252	8-729-402-42	TRANSISTOR	UN5213 (TR400/TR750)	R133	1-216-819-11	METAL CHIP 680 5% 1/16W	
Q1253	8-729-823-16	TRANSISTOR	2SC4555 (TR400/TR750)	R134	1-216-834-11	METAL CHIP 12K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q1254	8-729-823-16	TRANSISTOR	2SC4555 (TR400/TR750)	R135	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q1257	8-729-420-24	TRANSISTOR	2SB1218A (TR70/TR80)	R136	1-216-820-11	METAL CHIP 820 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q1258	8-729-230-63	TRANSISTOR	2SC4116 (TR400/TR750)	R137	1-216-821-11	METAL CHIP 1K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
Q1259	8-729-420-20	TRANSISTOR	XN4312 (TR400/TR750)				
< RESISTOR >				R138	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R101	1-216-864-11	METAL CHIP	0 5% 1/16W	R139	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R102	1-216-837-11	METAL CHIP	22K 5% 1/16W	R140	1-216-813-11	METAL CHIP 220 5% 1/16W	
R103	1-216-839-11	METAL CHIP	33K 5% 1/16W	R141	1-216-817-11	METAL CHIP 470 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R104	1-216-815-11	METAL CHIP	330 5% 1/16W (TR400/TR750)	R142	1-216-818-11	METAL CHIP 560 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R104	1-216-819-11	METAL CHIP	680 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R143	1-216-808-11	METAL CHIP 82 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R105	1-216-816-11	METAL CHIP	390 5% 1/16W (TR400/TR750)	R144	1-216-818-11	METAL CHIP 560 5% 1/16W	
R105	1-216-819-11	METAL CHIP	680 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R146	1-216-809-11	METAL CHIP 100 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R106	1-216-814-11	METAL CHIP	270 5% 1/16W	R147	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R107	1-216-813-11	METAL CHIP	220 5% 1/16W	R148	1-216-813-11	METAL CHIP 220 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R108	1-216-800-11	METAL GLAZE	18 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R149	1-216-813-11	METAL CHIP 220 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R108	1-216-801-11	METAL CHIP	22 5% 1/16W (TR400/TR750)	R150	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R109	1-216-803-11	METAL CHIP	33 5% 1/16W (TR400/TR750)	R151	1-216-823-11	METAL CHIP 1.5K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R109	1-216-804-11	METAL CHIP	39 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R152	1-216-824-11	METAL CHIP 1.8K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R110	1-216-818-11	METAL CHIP	560 5% 1/16W	R153	1-216-830-11	METAL CHIP 5.6K 5% 1/16W (TR42/TR70/TR82/TR550)	
R111	1-218-875-11	METAL CHIP	15K 0.50% 1/16W	R153	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR72/TR80/TR400/TR430/TR750)	
R112	1-216-836-11	METAL CHIP	18K 5% 1/16W	R154	1-216-821-11	METAL CHIP 1K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R114	1-216-828-11	METAL CHIP	3.9K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R155	1-216-820-11	METAL CHIP 820 5% 1/16W (TR400/TR750)	
R114	1-216-829-11	METAL CHIP	4.7K 5% 1/16W (TR400/TR750)	R156	1-216-817-11	METAL CHIP 470 5% 1/16W (TR400/TR750)	
R118	1-216-836-11	METAL CHIP	18K 5% 1/16W	R157	1-216-817-11	METAL CHIP 470 5% 1/16W (TR400/TR750)	
R119	1-216-864-11	METAL CHIP	0 5% 1/16W	R158	1-216-836-11	METAL CHIP 18K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R120	1-216-831-11	METAL CHIP	6.8K 5% 1/16W	R159	1-216-836-11	METAL CHIP 18K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R122	1-216-853-11	METAL CHIP	470K 5% 1/16W	R160	1-216-818-11	METAL CHIP 560 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R123	1-216-833-11	METAL CHIP	10K 5% 1/16W (TR72/TR80/TR400/TR430/TR750)				
R123	1-216-836-11	METAL CHIP	18K 5% 1/16W (TR42/TR70/TR72/TR82/TR550)				
R124	1-216-864-11	METAL CHIP	0 5% 1/16W				
R126	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R127	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R128	1-216-825-11	METAL CHIP	2.2K 5% 1/16W				



**VS-104****VS-112**

Ref. No.	Part No.	Description	Remark		
R161	1-216-817-11	METAL CHIP 470 5%	1/16W		
R162	1-216-818-11	METAL CHIP 560 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R163	1-216-821-11	METAL CHIP 1K 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R164	1-216-864-11	METAL CHIP 0 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R165	1-216-821-11	METAL CHIP 1K 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R166	1-216-816-11	METAL CHIP 390 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R167	1-216-821-11	METAL CHIP 1K 5%	1/16W		
		(TR400/TR750)			
R168	1-216-815-11	METAL CHIP 330 5%	1/16W		
		(TR400/TR750)			
R169	1-216-816-11	METAL CHIP 390 5%	1/16W		
		(TR400/TR750)			
R170	1-216-822-11	METAL CHIP 1.2K 5%	1/16W		
		(TR400/TR750)			
R171	1-216-823-11	METAL CHIP 1.5K 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R173	1-216-828-11	METAL CHIP 3.9K 5%	1/16W		
		(TR400/TR750)			
R174	1-216-816-11	METAL CHIP 390 5%	1/16W		
		(TR400/TR750)			
R175	1-216-821-11	METAL CHIP 1K 5%	1/16W		
R178	1-216-809-11	METAL CHIP 100 5%	1/16W		
R179	1-216-825-11	METAL CHIP 2.2K 5%	1/16W		
R180	1-216-809-11	METAL CHIP 100 5%	1/16W		
R181	1-216-821-11	METAL CHIP 1K 5%	1/16W		
R182	1-216-864-11	METAL CHIP 0 5%	1/16W		
		(TR400/TR750)			
R185	1-216-847-11	METAL CHIP 150K 5%	1/16W		
R186	1-216-837-11	METAL CHIP 22K 5%	1/16W		
R187	1-216-837-11	METAL CHIP 22K 5%	1/16W		
R188	1-216-837-11	METAL CHIP 22K 5%	1/16W		
R189	1-216-837-11	METAL CHIP 22K 5%	1/16W		
R190	1-216-817-11	METAL CHIP 470 5%	1/16W		
		(TR400/TR750)			
R191	1-216-815-11	METAL CHIP 330 5%	1/16W		
		(TR400/TR750)			
R193	1-216-815-11	METAL CHIP 330 5%	1/16W		
R194	1-216-818-11	METAL CHIP 560 5%	1/16W		
R195	1-216-839-11	METAL CHIP 33K 5%	1/16W		
R196	1-216-836-11	METAL CHIP 18K 5%	1/16W		
R197	1-216-864-11	METAL CHIP 0 5%	1/16W		
R198	1-216-864-11	METAL CHIP 0 5%	1/16W		
		(TR70/TR80)			
R199	1-216-864-11	METAL CHIP 0 5%	1/16W		
		(TR70/TR80)			
R200	1-216-864-11	METAL CHIP 0 5%	1/16W		
		(TR400/TR750)			

Ref. No.	Part No.	Description	Remark		
R201	1-216-829-11	METAL CHIP 4.7K 5%	1/16W		
R202	1-216-832-11	METAL CHIP 8.2K 5%	1/16W		
R203	1-216-829-11	METAL CHIP 4.7K 5%	1/16W		
R205	1-216-864-11	METAL CHIP 0 5%	1/16W		
R206	1-216-817-11	METAL CHIP 470 5%	1/16W		
		(TR400/TR750)			
R206	1-216-864-11	METAL CHIP 0 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R207	1-216-804-11	METAL CHIP 39 5%	1/16W		
R208	1-216-821-11	METAL CHIP 1K 5%	1/16W		
		(TR400/TR750)			
R209	1-216-814-11	METAL CHIP 270 5%	1/16W		
R210	1-216-821-11	METAL CHIP 1K 5%	1/16W		
R211	1-216-803-11	METAL CHIP 33 5%	1/16W		
R213	1-216-833-11	METAL CHIP 10K 5%	1/16W		
R214	1-216-828-11	METAL CHIP 3.9K 5%	1/16W		
R215	1-216-819-11	METAL CHIP 680 5%	1/16W		
R216	1-216-825-11	METAL CHIP 2.2K 5%	1/16W		
R218	1-216-821-11	METAL CHIP 1K 5%	1/16W		
R219	1-216-831-11	METAL CHIP 6.8K 5%	1/16W		
R220	1-216-829-11	METAL CHIP 4.7K 5%	1/16W		
		(TR42/TR72/TR82/TR430/TR550)			
R221	1-216-829-11	METAL CHIP 4.7K 5%	1/16W		
		(TR42/TR72/TR82/TR430/TR550)			
R222	1-216-829-11	METAL CHIP 4.7K 5%	1/16W		
		(TR42/TR72/TR82/TR430/TR550)			
R223	1-216-833-11	METAL CHIP 10K 5%	1/16W		
		(TR42/TR72/TR82/TR430/TR550)			
R224	1-216-829-11	METAL CHIP 4.7K 5%	1/16W		
R226	1-216-831-11	METAL CHIP 6.8K 5%	1/16W		
R230	1-216-830-11	METAL CHIP 5.6K 5%	1/16W		
R231	1-216-833-11	METAL CHIP 10K 5%	1/16W		
R232	1-216-830-11	METAL CHIP 5.6K 5%	1/16W		
R234	1-216-864-11	METAL CHIP 0 5%	1/16W		
R235	1-218-877-11	METAL CHIP 18K 0.50%	1/16W		
R241	1-216-833-11	METAL CHIP 10K 5%	1/16W		
R245	1-216-829-11	METAL CHIP 4.7K 5%	1/16W		
		(TR42/TR70/TR72/TR80/TR82/TR430/TR550)			
R246	1-216-819-11	METAL CHIP 680 5%	1/16W		
R247	1-216-815-11	METAL CHIP 330 5%	1/16W		
R253	1-218-849-11	METAL CHIP 1.2K 0.50%	1/16W		
R255	1-216-821-11	METAL CHIP 1K 5%	1/16W		
R256	1-216-821-11	METAL CHIP 1K 5%	1/16W		
R259	1-218-859-11	METAL CHIP 3.3K 0.50%	1/16W		
R261	1-216-821-11	METAL CHIP 1K 5%	1/16W		
R262	1-216-825-11	METAL CHIP 2.2K 5%	1/16W		
R263	1-218-839-11	METAL GLAZE 470 0.50%	1/16W		
R264	1-216-828-11	METAL CHIP 3.9K 5%	1/16W		
		(TR400/TR750)			
R265	1-216-818-11	METAL CHIP 560 5%	1/16W		
R266	1-218-837-11	METAL GLAZE 390 0.50%	1/16W		
		(TR400/TR750)			



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R272	1-216-826-11	METAL CHIP	2.7K 5% 1/16W	R318	1-216-820-11	METAL CHIP 820 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R273	1-216-830-11	METAL CHIP	5.6K 5% 1/16W	R319	1-216-818-11	METAL CHIP 560 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R274	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R321	1-216-813-11	METAL CHIP 220 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R275	1-216-295-00	METAL CHIP	0 5% 1/10W	R322	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R276	1-216-296-00	METAL CHIP	0 5% 1/8W	R323	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R277	1-216-295-00	METAL CHIP	0 5% 1/10W (TR400/TR750)	R324	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R278	1-216-296-00	METAL CHIP	0 5% 1/8W (TR400/TR750)	R325	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R279	1-216-819-11	METAL CHIP	680 5% 1/16W	R326	1-216-813-11	METAL CHIP 220 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R280	1-216-841-11	METAL CHIP	47K 5% 1/16W	R328	1-216-820-11	METAL CHIP 820 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R281	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR80/TR400/TR750)	R329	1-216-833-11	METAL CHIP 10K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R282	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R331	1-216-825-11	METAL CHIP 2.2K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R283	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R333	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R285	1-216-857-11	METAL CHIP	1M 5% 1/16W	R334	1-216-815-11	METAL CHIP 330 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R286	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R338	1-216-812-11	METAL CHIP 180 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R288	1-216-844-11	METAL CHIP	82K 5% 1/16W	R339	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R289	1-216-821-11	METAL CHIP	1K 5% 1/16W	R342	1-216-831-11	METAL CHIP 6.8K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R290	1-216-864-11	METAL CHIP	0 5% 1/16W	R343	1-216-853-11	METAL CHIP 470K 5% 1/16W (TR400/TR750)	
R291	1-216-833-11	METAL CHIP	10K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R346	1-216-857-11	METAL CHIP 1M 5% 1/16W (TR400/TR750)	
R293	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR400/TR750)	R347	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R295	1-216-864-11	METAL CHIP	0 5% 1/16W	R348	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R296	1-216-815-11	METAL CHIP	330 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R349	1-216-864-11	METAL CHIP 0 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R297	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R350	1-216-844-11	METAL CHIP 82K 5% 1/16W (TR400/TR750)	
R300	1-216-817-11	METAL CHIP	470 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R351	1-216-821-11	METAL CHIP 1K 5% 1/16W (TR400/TR750)	
R302	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R354	1-216-825-11	METAL CHIP 2.2K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R303	1-216-810-11	METAL CHIP	120 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R355	1-216-842-11	METAL CHIP 56K 5% 1/16W (TR400/TR750)	
R304	1-216-833-11	METAL CHIP	10K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R356	1-216-839-11	METAL CHIP 33K 5% 1/16W (TR400/TR750)	
R305	1-216-820-11	METAL CHIP	820 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R357	1-216-829-11	METAL CHIP 4.7K 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
R307	1-216-813-11	METAL CHIP	220 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	R358	1-216-821-11	METAL CHIP 1K 5% 1/16W (TR400/TR750)	
R308	1-216-842-11	METAL CHIP	56K 5% 1/16W	R359	1-216-817-11	METAL CHIP 470 5% 1/16W (TR400/TR750)	
R309	1-216-839-11	METAL CHIP	33K 5% 1/16W	R360	1-216-826-11	METAL CHIP 2.7K 5% 1/16W (TR400/TR750)	
R312	1-216-821-11	METAL CHIP	1K 5% 1/16W	R361	1-216-825-11	METAL CHIP 2.2K 5% 1/16W (TR400/TR750)	
R313	1-216-817-11	METAL CHIP	470 5% 1/16W				
R314	1-216-864-11	METAL CHIP	0 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)				
R315	1-216-821-11	METAL CHIP	1K 5% 1/16W				
R316	1-216-815-11	METAL CHIP	330 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)				
R317	1-216-820-11	METAL CHIP	820 5% 1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)				

[illegible]

**VS-104****VS-112**

Ref. No.	Part No.	Description	Remark		
R362	1-216-825-11	METAL CHIP	2. 2K	5%	1/16W (TR400/TR750)
R363	1-216-825-11	METAL CHIP	2. 2K	5%	1/16W (TR400/TR750)
R364	1-216-864-11	METAL CHIP	0	5%	1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)
R366	1-216-864-11	METAL CHIP	0	5%	1/16W (TR42/TR70/TR72/TR80/TR82/TR430/TR550)
R368	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W
R373	1-216-833-11	METAL CHIP	10K	5%	1/16W
R375	1-216-864-11	METAL CHIP	0	5%	1/16W (TR400/TR750)
R377	1-216-864-11	METAL CHIP	0	5%	1/16W (TR42/TR72/TR82/TR430/TR550)
R378	1-216-864-11	METAL CHIP	0	5%	1/16W (TR42/TR72/TR82/TR430/TR550)
R380	1-216-837-11	METAL CHIP	22K	5%	1/16W
R381	1-216-837-11	METAL CHIP	22K	5%	1/16W
R383	1-216-842-11	METAL CHIP	56K	5%	1/16W
R387	1-216-825-11	METAL CHIP	2. 2K	5%	1/16W
R391	1-216-864-11	METAL CHIP	0	5%	1/16W
R398	1-216-821-11	METAL CHIP	1K	5%	1/16W
R399	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W
R500	1-216-841-11	METAL CHIP	47K	5%	1/16W
R501	1-216-833-11	METAL CHIP	10K	5%	1/16W
R502	1-216-295-00	METAL CHIP	0	5%	1/10W
R503	1-216-841-11	METAL CHIP	47K	5%	1/16W
R505	1-216-864-11	METAL CHIP	0	5%	1/16W
R506	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W (TR70/TR80)
R506	1-216-841-11	METAL CHIP	47K	5%	1/16W (TR42/TR72/TR82/TR400/TR430/TR550/TR750)
R507	1-216-857-11	METAL CHIP	1M	5%	1/16W
R508	1-216-821-11	METAL CHIP	1K	5%	1/16W
R509	1-216-851-11	METAL CHIP	330K	5%	1/16W
R510	1-216-841-11	METAL CHIP	47K	5%	1/16W
R511	1-216-839-11	METAL CHIP	33K	5%	1/16W
R512	1-216-837-11	METAL CHIP	22K	5%	1/16W
R513	1-216-837-11	METAL CHIP	22K	5%	1/16W
R514	1-216-845-11	METAL CHIP	100K	5%	1/16W
R515	1-216-853-11	METAL CHIP	470K	5%	1/16W
R517	1-216-821-11	METAL CHIP	1K	5%	1/16W
R518	1-216-857-11	METAL CHIP	1M	5%	1/16W
R519	1-216-817-11	METAL CHIP	470	5%	1/16W
R520	1-216-845-11	METAL CHIP	100K	5%	1/16W
R522	1-216-841-11	METAL CHIP	47K	5%	1/16W
R523	1-216-831-11	METAL CHIP	6. 8K	5%	1/16W
R525	1-216-853-11	METAL CHIP	470K	5%	1/16W
R526	1-216-841-11	METAL CHIP	47K	5%	1/16W
R527	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W
R528	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W
R529	1-216-845-11	METAL CHIP	100K	5%	1/16W

Ref. No.	Part No.	Description	Remark		
R530	1-216-019-00	METAL CHIP	56	5%	1/10W
R531	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W
R532	1-216-833-11	METAL CHIP	10K	5%	1/16W
R533	1-217-671-11	METAL CHIP	1	5%	1/10W
R534	1-217-671-11	METAL CHIP	1	5%	1/10W
R535	1-217-671-11	METAL CHIP	1	5%	1/10W
R536	1-217-671-11	METAL CHIP	1	5%	1/10W
R537	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W
R538	1-216-821-11	METAL CHIP	1K	5%	1/16W
R539	1-216-841-11	METAL CHIP	47K	5%	1/16W
R540	1-216-829-11	METAL CHIP	4. 7K	5%	1/16W
R541	1-216-835-11	METAL CHIP	15K	5%	1/16W
R542	1-216-864-11	METAL CHIP	0	5%	1/16W
R543	1-216-864-11	METAL CHIP	0	5%	1/16W
R544	1-216-833-11	METAL CHIP	10K	5%	1/16W
R546	1-216-833-11	METAL CHIP	10K	5%	1/16W
R548	1-216-845-11	METAL CHIP	100K	5%	1/16W
R549	1-216-821-11	METAL CHIP	1K	5%	1/16W
R550	1-216-841-11	METAL CHIP	47K	5%	1/16W
R551	1-216-864-11	METAL CHIP	0	5%	1/16W
R552	1-216-833-11	METAL CHIP	10K	5%	1/16W
R553	1-216-821-11	METAL CHIP	1K	5%	1/16W
R554	1-216-841-11	METAL CHIP	47K	5%	1/16W
R555	1-216-864-11	METAL CHIP	0	5%	1/16W
R556	1-216-841-11	METAL CHIP	47K	5%	1/16W
R558	1-216-841-11	METAL CHIP	47K	5%	1/16W
R560	1-216-296-00	METAL CHIP	0	5%	1/8W
R561	1-216-833-11	METAL CHIP	10K	5%	1/16W
R562	1-216-851-11	METAL CHIP	330K	5%	1/16W
R563	1-216-841-11	METAL CHIP	47K	5%	1/16W
R567	1-216-821-11	METAL CHIP	1K	5%	1/16W
R569	1-216-845-11	METAL CHIP	100K	5%	1/16W (TR72/TR80/TR400/TR430/TR750)
R570	1-216-821-11	METAL CHIP	1K	5%	1/16W
R572	1-216-841-11	METAL CHIP	47K	5%	1/16W
R573	1-216-845-11	METAL CHIP	100K	5%	1/16W
R575	1-216-864-11	METAL CHIP	0	5%	1/16W
R577	1-216-845-11	METAL CHIP	100K	5%	1/16W
R578	1-216-833-11	METAL CHIP	10K	5%	1/16W
R579	1-216-864-11	METAL CHIP	0	5%	1/16W
R580	1-216-845-11	METAL CHIP	100K	5%	1/16W
R581	1-216-821-11	METAL CHIP	1K	5%	1/16W
R582	1-216-821-11	METAL CHIP	1K	5%	1/16W
R583	1-216-833-11	METAL CHIP	10K	5%	1/16W (TR42/TR70/TR82/TR550)
R584	1-216-864-11	METAL CHIP	0	5%	1/16W
R585	1-216-821-11	METAL CHIP	1K	5%	1/16W
R586	1-216-849-11	METAL CHIP	220K	5%	1/16W
R587	1-216-853-11	METAL CHIP	470K	5%	1/16W
R588	1-216-827-11	METAL CHIP	3. 3K	5%	1/16W

Ref. No.	Cont. No.	Cont. Title	Amount	Ref. No.	Cont. No.	Description	Amount
8383	1-004-004-11	WFLA, CDF	1.00 00	1,000	1-004-004-00	WFLA, CDF	1.00 00
		(TRANSFER)					
8384	1-004-004-12	WFLA, CDF	1.00 00	1,001	1-004-004-11	WFLA, CDF	4.00 00
		(TRANSFER)		1,002	1-004-004-12	WFLA, CDF	100 00
8385	1-004-004-13	WFLA, CDF	0 00	1,003	1-004-004-13	WFLA, CDF	1 00
		(TRANSFER)		1,004	1-004-004-14	WFLA, CDF	1 00
8386	1-004-004-14	WFLA, CDF	0 00	1,005	1-004-004-15	WFLA, CDF	1.00 00
		(TRANSFER)					
8387	1-004-004-15	WFLA, CDF	4.00 00	1,006	1-004-004-16	WFLA, CDF	1.00 00
8388	1-004-004-16	WFLA, CDF	20 00	1,007	1-004-004-17	WFLA, CDF	4.00 00
8389	1-004-004-17	WFLA, CDF	0 00	1,008	1-004-004-18	WFLA, CDF	10 00
		(TRANSFER)		1,009	1-004-004-19	WFLA, CDF	400 00
8390	1-004-004-18	WFLA, CDF	0 00	1,010	1-004-004-20	WFLA, CDF	4.00 00
		(TRANSFER)					
8391	1-004-004-19	WFLA, CDF	0 00	1,011	1-004-004-21	WFLA, CDF	100 00
		(TRANSFER)		1,012	1-004-004-22	WFLA, CDF	0 00
8392	1-004-004-20	WFLA, CDF	4.00 00	1,013	1-004-004-23	WFLA, CDF	0 00
8393	1-004-004-21	WFLA, CDF	0 00	1,014	1-004-004-24	WFLA, CDF	100 00
		(TRANSFER)		1,015	1-004-004-25	WFLA, CDF	100 00
8394	1-004-004-22	WFLA, CDF	100 00	1,016	1-004-004-26	WFLA, CDF	100 00
8395	1-004-004-23	WFLA, CDF	0 00	1,017	1-004-004-27	WFLA, CDF	100 00
		(TRANSFER)		1,018	1-004-004-28	WFLA, CDF	100 00
8396	1-004-004-24	WFLA, CDF	4.00 00	1,019	1-004-004-29	WFLA, CDF	100 00
8397	1-004-004-25	WFLA, CDF	0 00	1,020	1-004-004-30	WFLA, CDF	100 00
		(TRANSFER)					
8398	1-004-004-26	WFLA, CDF	100 00	1,021	1-004-004-31	WFLA, CDF	100 00
8399	1-004-004-27	WFLA, CDF	0 00	1,022	1-004-004-32	WFLA, CDF	100 00
		(TRANSFER)		1,023	1-004-004-33	WFLA, CDF	100 00
8400	1-004-004-28	WFLA, CDF	4.00 00	1,024	1-004-004-34	WFLA, CDF	100 00
8401	1-004-004-29	WFLA, CDF	0 00	1,025	1-004-004-35	WFLA, CDF	100 00
		(TRANSFER)		1,026	1-004-004-36	WFLA, CDF	100 00
8402	1-004-004-30	WFLA, CDF	100 00	1,027	1-004-004-37	WFLA, CDF	100 00
8403	1-004-004-31	WFLA, CDF	0 00	1,028	1-004-004-38	WFLA, CDF	100 00
		(TRANSFER)		1,029	1-004-004-39	WFLA, CDF	100 00
8404	1-004-004-32	WFLA, CDF	100 00	1,030	1-004-004-40	WFLA, CDF	100 00
8405	1-004-004-33	WFLA, CDF	4.00 00	1,031	1-004-004-41	WFLA, CDF	100 00
8406	1-004-004-34	WFLA, CDF	0 00	1,032	1-004-004-42	WFLA, CDF	100 00
		(TRANSFER)		1,033	1-004-004-43	WFLA, CDF	100 00
8407	1-004-004-35	WFLA, CDF	100 00	1,034	1-004-004-44	WFLA, CDF	100 00
8408	1-004-004-36	WFLA, CDF	0 00	1,035	1-004-004-45	WFLA, CDF	100 00
		(TRANSFER)		1,036	1-004-004-46	WFLA, CDF	100 00
8409	1-004-004-37	WFLA, CDF	100 00	1,037	1-004-004-47	WFLA, CDF	100 00
8410	1-004-004-38	WFLA, CDF	4.00 00	1,038	1-004-004-48	WFLA, CDF	100 00
8411	1-004-004-39	WFLA, CDF	0 00	1,039	1-004-004-49	WFLA, CDF	100 00
		(TRANSFER)		1,040	1-004-004-50	WFLA, CDF	100 00
8412	1-004-004-40	WFLA, CDF	100 00	1,041	1-004-004-51	WFLA, CDF	100 00
8413	1-004-004-41	WFLA, CDF	0 00	1,042	1-004-004-52	WFLA, CDF	100 00
		(TRANSFER)		1,043	1-004-004-53	WFLA, CDF	100 00
8414	1-004-004-42	WFLA, CDF	100 00	1,044	1-004-004-54	WFLA, CDF	100 00
8415	1-004-004-43	WFLA, CDF	4.00 00	1,045	1-004-004-55	WFLA, CDF	100 00
8416	1-004-004-44	WFLA, CDF	0 00	1,046	1-004-004-56	WFLA, CDF	100 00
		(TRANSFER)		1,047	1-004-004-57	WFLA, CDF	100 00
8417	1-004-004-45	WFLA, CDF	100 00	1,048	1-004-004-58	WFLA, CDF	100 00
8418	1-004-004-46	WFLA, CDF	4.00 00	1,049	1-004-004-59	WFLA, CDF	100 00
8419	1-004-004-47	WFLA, CDF	0 00	1,050	1-004-004-60	WFLA, CDF	100 00
		(TRANSFER)					



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R589	1-216-864-11	METAL CHIP	0 5% 1/16W	R1270	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR80/TR400/TR750)
R591	1-216-821-11	METAL CHIP	1K 5% 1/16W	R1279	1-216-837-11	METAL CHIP	22K 5% 1/16W (TR400/TR750)
R592	1-216-841-11	METAL CHIP	47K 5% 1/16W	R1280	1-216-837-11	METAL CHIP	22K 5% 1/16W (TR400/TR750)
R593	1-216-845-11	METAL CHIP	100K 5% 1/16W	R1281	1-216-829-11	METAL CHIP	4.7K 5% 1/16W (TR400/TR750)
R594	1-216-821-11	METAL CHIP	1K 5% 1/16W	R1282	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR400/TR750)
R595	1-216-821-11	METAL CHIP	1K 5% 1/16W				
R596	1-216-833-11	METAL CHIP	10K 5% 1/16W				
R597	1-216-821-11	METAL CHIP	1K 5% 1/16W				
R943	1-216-864-11	METAL CHIP	0 5% 1/16W (TR80)	R1283	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR80)
R954	1-216-138-00	METAL CHIP	3.3 5% 1/8W	R1284	1-216-864-11	METAL CHIP	0 5% 1/16W (TR400/TR750)
R955	1-216-830-11	METAL CHIP	5.6K 5% 1/16W	R1285	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR80)
R956	1-216-836-11	METAL CHIP	18K 5% 1/16W	R1286	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR400/TR750)
R957	1-216-820-11	METAL CHIP	820 5% 1/16W	R1287	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR400/TR750)
R961	1-216-818-11	METAL CHIP	560 5% 1/16W				
R962	1-216-837-11	METAL CHIP	22K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R1400	1-216-864-11	METAL CHIP	0 5% 1/16W
R964	1-216-822-11	METAL CHIP	1.2K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R1401	1-216-864-11	METAL CHIP	0 5% 1/16W
R965	1-216-826-11	METAL CHIP	2.7K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R1403	1-216-845-11	METAL CHIP	100K 5% 1/16W
R966	1-216-826-11	METAL CHIP	2.7K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R1404	1-216-845-11	METAL CHIP	100K 5% 1/16W
R967	1-216-832-11	METAL CHIP	8.2K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	R1406	1-216-821-11	METAL CHIP	1K 5% 1/16W
R968	1-216-834-11	METAL CHIP	12K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	< NETWORK >			
R972	1-216-823-11	METAL CHIP	1.5K 5% 1/16W (TR42/TR72/TR82/TR430/TR550)	RB199	1-236-971-11	NETWORK, RES 0	(TR70/TR80)
R1251	1-216-829-11	METAL CHIP	4.7K 5% 1/16W (TR400/TR750)	RB500	1-236-436-11	NETWORK, RES 100K	
R1252	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR80)	RB501	1-236-432-11	NETWORK, RES 47K	
R1254	1-216-864-11	METAL CHIP	0 5% 1/16W (TR70/TR80)	RB502	1-236-971-11	NETWORK, RES 0	
R1276	1-216-829-11	METAL CHIP	4.7K 5% 1/16W (TR70/TR80)	RB503	1-236-432-11	NETWORK, RES 47K	
R1277	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR70/TR80)	RB504	1-236-412-11	NETWORK, RES 1.0K	
R1278	1-216-825-11	METAL CHIP	2.2K 5% 1/16W (TR70/TR80)	RB505	1-236-412-11	NETWORK, RES 1.0K	
R1259	1-216-821-11	METAL CHIP	1K 5% 1/16W (TR400/TR750)	RB506	1-236-412-11	NETWORK, RES 1.0K	
R1260	1-216-815-11	METAL CHIP	330 5% 1/16W (TR400/TR750)	RB507	1-236-448-11	NETWORK, RES 1.0M	
R1265	1-216-804-11	METAL CHIP	39 5% 1/16W (TR400/TR750)	RB508	1-236-436-11	NETWORK, RES 100K	
R1266	1-216-803-11	METAL CHIP	33 5% 1/16W (TR400/TR750)	RB509	1-236-444-11	NETWORK, RES 470K	
R1267	1-216-804-11	METAL CHIP	39 5% 1/16W (TR400/TR750)	RB510	1-236-412-11	NETWORK, RES 1.0K	
R1268	1-216-803-11	METAL CHIP	33 5% 1/16W (TR400/TR750)	RB512	1-236-412-11	NETWORK, RES 1.0K	
				RB513	1-236-971-11	NETWORK, RES 0	
				RB514	1-236-907-11	RESISTOR, NETWORK (CHIP TYPE) 100K	
				RB515	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE) 1K	
				RB516	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE) 1K	
				RB518	1-236-971-11	NETWORK, RES 0	
				RB519	1-236-971-11	NETWORK, RES 0	
				RB520	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE) 1K	
				RB521	1-236-412-11	NETWORK, RES 1.0K	
				RB522	1-236-448-11	NETWORK, RES 1.0M	
				RB523	1-236-432-11	NETWORK, RES 47K	
				RB524	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE) 10K	
				RB525	1-236-424-11	NETWORK, RES 10K	



**VS-104****VS-112****ZB-2**

Ref. No.	Part No.	Description	Remark
RB526	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE) 10K	
RB527	1-236-424-11	NETWORK, RES 10K	
RB528	1-236-424-11	NETWORK, RES 10K	
RB529	1-236-424-11	NETWORK, RES 10K	
RB530	1-236-424-11	NETWORK, RES 10K	
RB531	1-236-424-11	NETWORK, RES 10K	
RB532	1-236-424-11	NETWORK, RES 10K	
RB533	1-236-412-11	NETWORK, RES 1.0K	
RB534	1-236-412-11	NETWORK, RES 1.0K	
RB535	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE) 10K	
RB536	1-236-412-11	NETWORK, RES 1.0K	
RB537	1-236-412-11	NETWORK, RES 1.0K	
RB542	1-236-412-11	NETWORK, RES 1.0K	
RB543	1-236-412-11	NETWORK, RES 1.0K	
RB544	1-236-412-11	NETWORK, RES 1.0K	
RB547	1-236-444-11	NETWORK, RES 470K (TR72/TR80/TR400/TR430/TR750)	
RB548	1-236-416-11	NETWORK, RES 2.2K	
RB549	1-236-971-11	NETWORK, RES 0	
RB550	1-236-971-11	NETWORK, RES 0	
RB551	1-236-412-11	NETWORK, RES 1.0K	
RB552	1-236-412-11	NETWORK, RES 1.0K	
RB553	1-236-412-11	NETWORK, RES 1.0K	
RB554	1-236-971-11	NETWORK, RES 0	
< VARIABLE RESISTOR >			
RV202	1-238-086-11	RES, ADJ, CERMET 470	
< VIBRATOR >			
X201	1-579-365-21	VIBRATOR, CRYSTAL (3.58MHz)	
X501	1-579-550-11	VIBRATOR, CRYSTAL (32kHz)	
X502	1-760-314-11	VIBRATOR, CRYSTAL (11.895MHz)	
< VIBRATOR >			
XTL501	1-579-369-21	VIBRATOR (10MHz)	
*****			
*	A-7072-002-A	ZB-2 BOARD, COMPLETE ***** (Ref. No. 4,000 Series)	
< BUZZER >			
BU101	1-529-107-11	BUZZER, PIEZOELECTRIC	
< CAPACITOR >			
C102	1-164-346-11	CERAMIC CHIP 1uF	16V
C103	1-164-346-11	CERAMIC CHIP 1uF	16V

Ref. No.	Part No.	Description	Remark
< CONNECTOR >			
CN101	1-691-483-21	CONNECTOR, FFC/FPC 4P	
< BATTERY HOLDER >			
LI101	1-550-104-11	HOLDER, BATTERY	
*****			
MISCELLANEOUS *****			
110	1-810-535-11	DISPLAY PANEL, LIQUID CRYSTAL (TR400/TR750)	
111	1-467-676-11	SWITCH BLOCK, CONTROL (CK) (TR42/TR82/TR550)	
111	1-467-676-21	SWITCH BLOCK, CONTROL (CK) (TR70/TR72/TR430)	
111	1-467-676-41	SWITCH BLOCK, CONTROL (CK) (TR400/TR750)	
△162	1-452-673-11	CRT ASSY (M01KXX90WB) (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
163	1-651-894-11	FP-86 FLEXIBLE BOARD (TR42/TR72/TR82/TR400/TR430/TR550/TR750)	
167	1-651-903-11	FP-92 FLEXIBLE BOARD (TR70/TR80)	
168	1-651-893-11	FP-85 FLEXIBLE BOARD (TR70/TR80)	
171	1-517-325-11	LANP, FLUORESCENT (0.55 INCH) (TR70/TR80)	
181	8-753-015-00	LCX005AK-1 (TR70/TR80)	
201	1-467-649-12	SWITCH BLOCK, CONTROL (FK) (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
201	1-467-649-31	SWITCH BLOCK, CONTROL (FK) (TR400/TR750)	
208	1-691-471-11	CONNECTOR, TRANSLATION 11P	
212	1-651-891-11	FP-52 FLEXIBLE BOARD (TR42/TR70/TR72/TR80/TR82/TR430/TR550)	
212	1-651-892-11	FP-53 FLEXIBLE BOARD (TR400/TR750)	
260	1-765-361-11	CABLE, FLAT (FFC-115) (TR72/TR80/TR400/TR430/TR750)	
260	1-765-362-11	CABLE, FLAT (FFC-134) (TR42/TR70/TR82/TR550)	
262	1-547-716-11	LENS, ZOOM (VCL-5412WA) (TYPE II)	
262	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)	
264	1-547-529-21	FILTER BLOCK, OPTICAL (TR82/TR400/TR550/TR750)	
264	1-547-558-21	FILTER BLOCK, OPTICAL (TR42/TR70/TR80/TR430)	
871	1-641-643-12	FP-444 FLEXIBLE BOARD	
872	1-691-254-13	CONNECTOR, TRANSLATION 10P	
IC691	A-7030-373-A	CCD BLOCK ASSY (AUTO) (059V SERVICE) (CCD IMAGER) (TR82/TR400/TR550/TR750)	
IC691	A-7030-368-A	CCD BLOCK ASSY (AUTO) (054 SERVICE) (CCD IMAGER) (TR42/TR70/TR72/TR80/TR430)	
J201	1-537-731-11	TERMINAL BOARD (TR42/TR70/TR82/TR550)	
J201	1-537-731-21	TERMINAL BOARD (TR72/TR80/TR430)	
J201	1-537-731-31	TERMINAL BOARD (TR400/TR750)	
M002	1-542-162-11	MICROPHONE UNIT	

The components identified by mark  
△ or dotted line with mark △ are  
critical for safety.  
Replace only with part number  
specified.

Les composants identifiés par une  
marque △ sont critiques pour la  
sécurité.  
Ne les remplacer que par une pièce  
portant le numéro spécifié.

[illegible]

The compounds identified by peak 4, as defined here with most of the structural formulae.

Los organismos beneficiarios por sus acciones en sus respectivos países se refieren.

## 6-6. INTERFACE

6-6-1. System Control – Video/Audio Block Interface (VS BOARD)

NAME	I/O	No.	VTR MODE				CAMERA MODE	
			STOP	FF	REW	PB	STAND BY	REC
SP/LP	O	IC505 71	H	H	H	*1	H	H
VA PB MODE	O	IC505 65	L	L	L	H	L	L
AUDIO MUTE	O	IC505 46	L	L	L	L	L	L
VIDEO MUTE	O	IC505 47	H	H	H	*8	L	L
CAM/LINE	O	IC505 26	L	L	L	L	H	H
JOG VD	O	IC505 3	L	L	L	L	L	L
RP PB MODE	O	IC505 1	H	H	H	H	H	L
FE ON	O	IC505 2	H	H	H	H	H	L
RF SWP	O	IC505 97	L	*2	*2	*2	*2	*2
JOG	O	IC505 4	L	L	L	L	L	L
CS VIDEO	O	IC505 24	V period "L" pulse					
CS DA	O	IC505 37	V period "H" pulse					
DATA TO SLVE	O	IC503 76	V period pulse train					
MODECON SCK	I	IC503 77	V period pulse train					
SP/LP DET	I	IC505 61	L	*3	*3	L	H	H
CLOG DET	I	IC505 62	L	*4	*4	*4	*4	H
VTR SYNC	I	IC505 64	L	*5	*5	*5	*5	*5
COMP REC	O	IC505 25	L	L	L	L	L	L

- \*1. Outputs discrimination result of the playback tape.  
 "H": SP mode, "L": LP mode.  
 \*2. 30 Hz duty 50% pulse (synchronized with drum rotation)  
 \*3. "H": SP recording area on tape, "L": LP recording area.  
 \*4. "H": no recording area.  
 \*5. Composite sync signal.  
 \*6. "H" when tape no signal.

6-6-2. System Control – Servo Block Interface

NAME	I/O	No.	VTR MODE				CAMERA MODE	
			STOP	FF	REW	PB	STAND BY	REC
T.REEL FG	I	IC505 60	-	*1	*1	*1	-	*1
S.REEL FG	I	IC505 59	-	*1	*1	*1	-	*1
ATF ERROR	I	IC505 58	-	*2	*2	*2	*2	*2
DRUM PG	I	IC505 65	-	*3	*3	*3	*3	*3
DRUM FG	I	IC505 67	-	*4	*4	*4	*4	*4
CAP FG/CFG HMS	I	IC505 68, 75	-	*5	*5	*5	*5	*5
CAP ON	O	IC505 69	L	H	H	H	L	H
REF PILOT	O	IC505 83	*7	*8	*8	*8	*8	*8
RP PB MODE	O	IC505 1	H	H	H	H	H	L
DRUM RVS *9	O	IC505 33	H	H	H	H	H	H
CAP FWD/RVS	O	IC505 10	L	H	L	H	L	H
DRUM PWM	O	IC505 74	L	*8	*8	*8	*8	*8
CAP PWM	O	IC505 73	L	*8	*8	*8	L	*8
LM LIM CONT *10	O	IC505 37	L	L	L	L	L	L
DRUM ON *11	O	IC505 32	L	H	H	H	H	H
DRUM ACC	O	IC505 89	L	L	L	L	L	L
DRUM BRK	O	IC505 90	L	L	L	L	L	L

- \*1. Inputting waveform.  
 \*2. ATF error voltage input.  
 \*3. One PG pulse input.  
 \*4. FG pulses input.  
 \*5. FG pulses input.  
 \*6. Four frequencies.  
 \*7. f<sub>1</sub> (102.54 kHz) or f<sub>3</sub> (165.21 kHz) output  
 \*8. PWM signal.  
 \*9. Normally "H".  
 \*10. Temporary "L" when load (drum reverse rotation).  
 \*11. Temporary "H" when cassette loading (finger catch protection).  
 "H": approx. 1.3 Vdc.



## 1-2. CAMERA SYSTEM ADJUSTMENT

### 1. Power Supply Voltage Check (DD board)

Subject	Option
Measuring instrument	Digital voltmeter
D5V check	
Measurement point	Pins ②③ of CN901
Specified value	$4.9 \pm 0.1$ Vdc
D3.6V check	
Measurement point	Pins ①① and ②② of CN901
Specified value	$3.6 \pm 0.1$ Vdc
CAM 5V check	
Measurement point	Pins ⑤⑤ and ⑥⑥ of CN901
Specified value	$4.85 \pm 0.1$ Vdc
CAM 15V check	
Measurement point	Pin ⑦⑦ of CN901
Specified value	$15 \pm 0.3$ Vdc
CAM -9V check	
Measurement point	Pin ③① of CN901
Specified value	$-8.5^{+0.25}_{-0.4}$ Vdc

Checking method:

- 1) Check that each power supply voltage satisfies the specified value.

### 2. Page F Data Initialization

**Note:** It is necessary to perform all adjustments of the camera section from the beginning again if the data of page F has been initialized.

Initializing method:

- 1) Page: 6, address: 00, data: 01
- 2) Check that the data of page: 6, address: 11 is 00.
- 3) Set data: 2D to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 4) Check that the data of page: 6, address: 11 is 01.
- 5) Set data: 00 to page: 6, address: 01. and press the PAUSE button of the adjusting remote commander.
- 6) After performing "Page F data modification", perform all the adjustments of the camera section (page F).

## 10. CAMERA SYSTEM ADJUSTMENT

### 1. Power Supply Voltage Check (CC-board)

Subject	Option
Measuring instrument	Digital voltmeter
TVR check	
Measurement point	Pin ② of CN60
Specified value	$4.5 \pm 0.1$ Vdc
CC-IF check	
Measurement point	Pin ② and ③ of CN60
Specified value	$5.4 \pm 0.1$ Vdc
CC-IF-IV check	
Measurement point	Pin ② and ③ of CN60
Specified value	$4.85 \pm 0.1$ Vdc
CC-IF-IV check	
Measurement point	Pin ② of CN60
Specified value	$12.7 \pm 0.1$ Vdc
CC-IF-IV check	
Measurement point	Pin ② of CN60
Specified value	$4.5 \pm 0.05$ Vdc

#### Checking method

- Check that each power supply voltage satisfies the specified value.

### 2. Page F Data Initialization

**Note:** It is necessary to perform all adjustments of the camera section from the beginning again if the data of page F has been initialized.

#### Initializing method

- Page 4, address 04, item 04
- Check that the data of page 4, address 04, is 00.
- Set data 00 to page 4, address 04, and press the PAUSE button of the adjoining remote commander.
- Check that the data of page 4, address 04, is 00.
- Set data 00 to page 4, address 04, and press the PAUSE button of the adjoining remote commander.
- After performing "Page F data initialization", perform all the adjustments of the camera section (page 7).



### 3. Page F Data Modification 1

The data (initial data) that is automatically written on page F after the initialization of the page F data will differ according to some camera micro processor versions. Change the data by manual input, and arrange it.

**Note 1:** When changing the data, to write the data to the non-volatile memory, press the PAUSE button of the adjusting remote commander every time the new data is set.

**Note 2:** When changing address: 00, set the data of page: 6, address: 00 to 80.

CCD-TR42/TR70/TR72/TR80/TR430

Address	Data
00	5C [5E]
01	0A
03	00
25	A5
27	3A
28	A2
2A	0C
2B	58
<2D>	<04>
2E	17
2F	22
30	08
32	50
34	00
35	30
3B	20
3D	03
50	05
54	66
57	66
58	59
5E	1E
60	3A
77	E0
[90]	[11]
9C	91
A4	02
BD	70
BE	35
BF	54

[ ] : CCD-TR70 only

< > : CCD-TR430 only

CCD-TR82/TR550

Address	Data
00	5A
20	79
21	79
27	3A
28	A2
2B	50
[2D]	[04]
2F	27
30	08
32	47
3B	20
3D	02
50	32
77	E0
9C	91
A4	02
B1	25
B3	25
B4	A2
BD	6E
BE	32
BF	54

[ ] : CCD-TR550 only

CCD-TR400/TR750

Address	Data
00	56
20	79
21	79
27	3A
28	A2
2B	50
[2D]	[04]
2F	29
30	08
32	48
3B	20
3D	02
50	32
77	E0
9C	91
A4	02
B1	25
B3	25
B4	A2
BD	6E
BE	32
BF	54

[ ] : CCD-TR750 only

#### [Distinguishing the Camera Micro Computer (IC602) Versions]

Each version can be distinguished by looking at the part name of the camera micro processor or the data of page: 6, address: 10.

Version	Part Name	Page: 6 Address: 10
Ver.1.0	SC424608	10

#### [Distinguishing the Steady Shot Control Micro Computer (IC777) Versions] (CCD-TR82/TR400/TR550/TR750)

Each version can be distinguished by looking at the part name of the steady shot control micro processor or the data of page: 6, address: 30.

Version	Part Name	Page: 6 Address: 30
Ver.1.0	CXP87132-010R	01

## 2. Page F Data Modification 1

The data (initial data) that is automatically written on page F after the initialization of the page F data will differ according to each control value processor version. Change the data by manual input, and saveage it.

**Note 1:** When changing the data, to write the data to the non-volatile memory, press the F4/F5E button of the adjusting remote commander every time the data is set.

**Note 2:** When changing address 03, set the data of page 4, address 0C to 03.

CCD-TR40/TV1000/TH40/TH40M

Address	Data
00	XX (F4)
01	0A
02	00
03	Ad
07	0A
08	Ad
0A	0C
0B	00
0D0	0F0
0E	17
0F	33
10	00
11	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	Ad
1B	Ad
1C	00
1D	00
1E	00
1F	00
20	00
21	00
22	00
23	00
24	00
25	00
26	00
27	00
28	00
29	00
2A	00
2B	00
2C	00
2D	00
2E	00
2F	00

[ ] : -CCD-TR40 only

[ ] : -CCD-TR400 only

CCD-TR40/TH40

Address	Data
00	0A
01	0A
02	0A
03	0A
08	Ad
0B	00
0C	0F0
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00

[ ] : -CCD-TH40 only

CCD-TR400/TH40

Address	Data
00	0A
01	0A
02	0A
03	0A
07	0A
08	Ad
0B	00
0C	0F0
0D	00
0E	00
0F	00
10	00
11	00
12	00
13	00
14	00
15	00
16	00
17	00
18	00
19	00
1A	00
1B	00
1C	00
1D	00
1E	00
1F	00

[ ] : -CCD-TH400 only

### Identifying the Camera Micro-Computer (CMC) Version

Each version can be identified by looking at the part name of the camera control processor or the data of page 4, address 03.

Version	Part Name	Page 4 Address: 03
Ver1.0	PC4400A	00

### Identifying the Steady Shot Control Micro-Computer (SCC) Version(-)CCD-TH40/TH40M/TH400/TH40M

Each version can be identified by looking at the part name of the steady shot control micro-processor or the data of page 4, address 0A.

Version	Part Name	Page 4 Address: 0A
Ver1.0	CCP400000A	00

#### 4. Page F Data Modification 2 (CCD-TR82/TR550)

Change the data of page: F, address: 2B according to the type of IC used for the camera core (IC609).

Changing Method:

- 1) Page: 6, address: 00, data: 01
- 2) Set data: 16 to page: 6, address: 02.
- 3) Select page: A.
- 4) Read the data displayed on the adjusting remote commander (4 digits) and take the second number as X.
- 5) When X is 2, set 53 to page: F, address: 2B. When X is 6, set 50.
- 6) Press the PAUSE button of the adjusting remote commander.

#### 5. Page E Data Write (CCD-TR42/TR70/TR72/TR80/TR430)

Adjustment Page	E
Adjustment Address	00 to 10

Writing method:

- 1) Page: 6, address: 00, data: 80
- 2) Select page E, and input the data shown in Table 7-1-5. to each address.  
(After setting the data, be sure to press the PAUSE button of the adjusting remote commander before changing the address.)
- 3) Set data: 00 to page: 6, address: 00.

Address	Data
00	00
01	0F
02	30
03	65
04	2B
05	00
06	00
07	00
08	C3
09	0C
0A	00
0B	7E
0C	65
0D	2E
0E	62
0F	EC
10	00

Table. 7-1-5.

#### 6. 28 MHz Original Oscillation Adjustment (VC board)

Adjust the 28 MHz oscillation of the synchronization clock.

If the oscillation is not 28 MHz, the period will be inaccurate or the image will not be in color.

Subject	Not required
Measurement Point	TP709 (CL)
Measuring Instrument	Frequency counter
Adjusting Element	CT701
Specified Value	14318181 $\pm$ 71 Hz

Adjusting method:

- 1) Use CT701 to adjust the oscillation frequency to 14318181  $\pm$  71 Hz.

#### 7. V SUB Adjustment

Set the CCD imager V SUB voltage to the voltage specified for the imager.

Subject	Not required
Adjustment Page	F
Adjustment Address	04

Adjusting Method:

- 1) Read the V SUB voltage code of the CCD imager.  
Obtain the corresponding V SUB data from the following table.
- 2) Page: 6, address: 00, data: 01
- 3) Set the V SUB data to page: F, address: 04.
- 4) Press the PAUSE button of the adjusting remote commander.

V SUB			V SUB		
Voltage Code	Data	Voltagee (Vdc) *1	Voltage Code	Data	Voltagee (Vdc) *1
e	6F	9.0	g	AD	14.0
f	75	9.5	r	B3	14.5
g	7B	10.0	s	B9	15.0
h	82	10.5	t	C0	15.5
j	88	11.0	u	C6	16.0
k	8E	11.5	v	CC	16.5
l	94	12.0	w	D2	17.0
m	9A	12.5	x	D8	17.5
n	A1	13.0	y	DF	18.0
p	A7	13.5	z	E5	18.5

\*1: The V SUB voltages (TP703) given are reference values.

4. **Page F Data Modification (J000-TR00/TH00)**  
Change the date of page F, address 20 according to the type of IC used for the master unit (J000).

**Changing Method**

- 1) Page E, address 00, date 01
- 2) Set date 10 to page E, address 00.
- 3) Select page A.
- 4) Read the data displayed on the adjusting remote commander (4 digits) and take the second character as X.
- 5) When X is 1, set 50 to page E, address 20. When X is 4, set 60.
- 6) Press the F0A00E button of the adjusting remote commander.

**5. Page E Data Write (J000-TR00/TH00/TA00/TE00)**

Adjustment Page	01
Adjustment Address	00 to 10

**Writing method**

- 1) Page E, address 00, date 00
- 2) Select page E, and input the data shown in Table 7-1-6, in each address.  
(When writing the data, be sure to press the F0A00E button of the adjusting remote commander before changing the address.)
- 3) Set date 00 to page E, address 00.

Address	Data
00	00
01	00
02	00
03	00
04	00
05	00
06	00
07	00
08	00
09	00
0A	00
0B	00
0C	00
0D	00
0E	00
0F	00
10	00

Table 7-1-6.

**6. 20 MHz Crystal Oscillation Adjustment (PC board)**

Adjust the 20 MHz oscillation of the synchronization clock.

If the oscillation is not 20 MHz, the period will be incorrect or the image will not be in color.

Subject	Not required
Adjustment Page	1F00 (21)
Adjusting Instrument	Frequency counter
Adjusting Element	CTP00
Specified Value	143.000 kHz to 143.010 kHz

**Adjusting method**

- 1) Use CTP00 to adjust the oscillation frequency to 143.000 ± 0.010 kHz.

**7. V-BLUR Adjustment**

Set the OSD image V-BLUR voltage to the voltage specified for the image.

Subject	Not required
Adjustment Page	0F
Adjustment Address	04

**Adjusting Method**

- 1) Read the V-BLUR voltage code of the OSD image.
- 2) Obtain the corresponding V-BLUR data from the following table.
- 3) Page E, address 00, date 00
- 4) Set the V-BLUR data to page E, address 04.
- 5) Press the F0A00E button of the adjusting remote commander.

V-BLUR			V-BLUR		
Voltage Code	Data	Voltage (Vpp) (%)	Voltage Code	Data	Voltage (Vpp) (%)
0	00	0.0	8	80	14.0
1	01	0.1	9	81	14.1
2	02	0.2	A	82	14.2
3	03	0.3	B	83	14.3
4	04	0.4	C	84	14.4
5	05	0.5	D	85	14.5
6	06	0.6	E	86	14.6
7	07	0.7	F	87	14.7

(\*) The V-BLUR voltage (Vpp) gives an reference value.

## 8. VRG Adjustment

Set the CCD imager V RG voltage to the voltage specified for the imager.

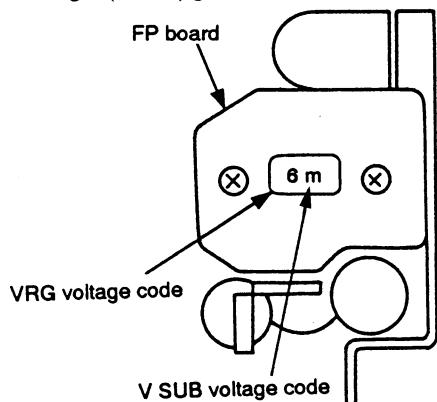
Subject	Not required
Adjustment Page	F
Adjustment Address	05 (V PGH)

Adjusting Method:

- 1) Read the VRG voltage code of the CCD imager.  
Obtain the corresponding VRG data from the following table.
- 2) Page: 6, address: 00, data: 01
- 3) Set the VRG data to page: F, address: 05.
- 4) Press the PAUSE button of the adjusting remote commander.

VRG		
Voltage Code	Data	Voltage (Vdc) *2
1	33	1.0
2	4E	1.5
3	69	2.0
4	84	2.5
5	9F	3.0
6	BA	3.5
7	D5	4.0

\*2: The VRG voltages (TP707) given are reference values.



**(Example)** When "6m" is displayed:  
The V SUB voltage code is "m" and therefore the V SUB data will be "9A".  
The VRG voltage code is "6" and therefore the VRG data will be "BA".

Fig. 7-1-7.

## 9. Flange Back Adjustment

The flange back adjustment for the inner focus lens is performed automatically.

Subject	Chart for flange back adjustment (2000 ± 5 mm from the front side of the lens Luminance: 300 ± 50 lux)
Measurement Point	Check the operations on the TV monitor
Measuring Instrument	TV monitor
Adjustment Page	F
Adjustment Address	16, 17, 18, 19, 1A, 1B

Adjusting method:

- 1) Check that the flange back adjustment chart center and the exposure display center coincide at both zoom lens TELE end and WIDE end.
- 2) Page: 6, address: 00, data: 01
- 3) Check that the data of page: 6, address: 21 is 00.
- 4) Check that the page: F, address: 16 to 1B data is at the initial value. (Refer to Table 7-1-4. "Page F address list")
- 5) Set data: 13 to page: 6, address: 01 and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 15 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.  
(The adjustment data is automatically input to page: F, addresses: 16 to 1B.)
- 7) Check that the data of page: 6, address: 21 is 01.  
(Display indicating flange back adjustment completion)

Processing after completing adjustments

- 1) Turn off the main power supply (6.3V).

#### 4. VBI Adjustment

For the OSD image VBI CT voltage is the voltage specified for the image.

Subject	Not required
Adjustment Page	7
Adjustment Address	05, 7A, 7B, 7C

#### Adjusting Method

- Read the VBI voltage code of the OSD image.
- Obtain the corresponding VBI data from the following table.
- Page 4, address 05, data 02
- Set the VBI data to page 7, address 7A.
- Press the PAUSE button of the adjusting remote command.

VBI		
Voltage Code	Data	Voltage (V) V <sub>BI</sub>
1	00	1.0
2	0E	1.2
3	0F	1.3
4	1A	1.4
5	1F	1.5
6	2A	1.6
7	2B	1.8

\*1: The VBI voltage (VBI CT) gives an reference value.



(Example) When "00" is displayed

The VBI CT voltage code is "0" and therefore the VBI data will be "0A".  
The VBI voltage code is "0F" and therefore the VBI data will be "0A".

Fig. 7-1-3.

#### 5. Charge Pump Adjustment

The charge pump adjustment for the inner focus lens is performed automatically.

Subject	Check the charge pump adjustment (0000 ± 5 mm from the focus side of the lens Load capacity: 500 ± 10 bar)
Adjustment Page	7
Adjustment Address	1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I

#### Adjusting Method

- Check that the charge pump adjustment (inner focus) and the exposure display status (visible at both ends from TELF and end/WOLF end).
- Page 4, address 05, data 02
- Check that the data of page 4, address 2B is 02.
- Check that the page 7, address 1B to 1F data is in the initial value. (Default: Table 7-1-4, "Page 7 address (a)")
- Set data 1B to page 4, address 02 and press the PAUSE button of the adjusting remote commander.
- Set data 1C to page 4, address 02, and press the PAUSE button of the adjusting remote commander.  
(The adjustment data is automatically input to page 1E, address 1A to 1B.)
- Check that the data of page 4, address 2B is 02.  
(Display indicating charge pump adjustment completion)

#### Processing after completing adjustments

- Turn off the main power supply (05, 7F).

## 10. Flange Back Check

Subject	Siemens star (2m from the front of the lens)
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Specified Value	Focused at the TELE end and WIDE end.

Checking method:

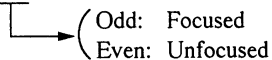
- 1) Place the Siemens star 2m from the front of the lens.
- 2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appears on the image.
- 3) Shoot the siemens star with the zoom TELE end.
- 4) Turn ON the auto focus.
- 5) When the lens is focused, turn OFF the auto focus. (Note 2)
- 6) Shoot the siemens star with the zoom WIDE end.
- 7) Check that the lens is focused.

**Note 1:** Input the following data for CCD-TR82/TR400/TR550/TR750.

- 1) Set data: 02 to page: 6, address: 32.
- 2) Set data: 01 to page: 6, address: 33.

**Note 2:** When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on page A of the adjusting remote commander.

- 1) Set data: 0C to page: 6, address: 02.
- 2) Page A shows the state of the focus.

A : 00 : XX  

 ( Odd: Focused  
 Even: Unfocused

Processing after compleating adjustments

- 1) Set data: 00 to page: 6, address: 02.

For CCD-TR82/TR400/TR550/TR750

- 2) Set data: 00 to page: 6, address: 32.
- 3) Set data: 00 to page: 6, address: 33.

## 11. HALL Adjustment

To eliminate the differences in the outputs of the hall element attached to the iris for detecting the position of the lens iris, adjust the hall AMP gain and hall offset.

Subject	Not required
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	06, 07
Specified Value	32 to 36 during IRIS OPEN B4 to B8 during IRIS CLOSE

Adjusting method:

- 1) Page: 6, address: 00, data: 01
- 2) Page: 1, address: 00, data: 01
- 3) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 03 to page: 6, address: 02.
- 5) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 80 to page: F, address: 07, and press the PAUSE button of the adjusting remote commander.
- 7) Set data: 40 to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
- 8) Read the DDS display data (the bottom two digits of the display data at the bottom right of the EVF or the monitor TV display), and set to W2.
- 9) Set data: 30 to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
- 10) Read the DDS display data, and set to W1.
- 11) Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 12) Read the DDS display data, and set to K1.
- 13) Set data: 40 to page: F, address: 06, and press the PAUSE button.
- 14) Read the DDS display data, and set to K2.
- 15) Convert W1, W2, K1, K2 to decimal notation, and obtain W1', W2', K1', K2'. (Refer to Table 7-1-5. "Hexadecimal notation-decimal notation conversion table".)
- 16) Calculate X1' using the following equations (decimal notation calculation).
 
$$A' = W2' + K1' - W1' - K2' \dots \dots \dots \text{Equation 1}$$

$$B' = W1' - K1' \dots \dots \dots \text{Equation 2}$$

$$X1' = \frac{2080 + (48 \times A') - (16 \times B')}{A'} \dots \dots \dots \text{Equation 3}$$

[illegible]

Subject	Electricity (20% from the form of the book)
Measurement Point	DCM display of TVP or TV monitor
Measuring Instruments	
Specified Value	Forward in the TELE and not WDR and.

[illegible]

- 1) Place the stimulus on the front face of the lens.
- 2) To open the TRL, decrease the luminous intensity to 0. The stimulus that up to a point before will appear on the image.
- 3) Mount the stimulus and write the name TRL read.
- 4) Then OFF the lens.
- 5) When the lens is focused, turn OFF the eye-lens. (Note 2)
- 6) Mount the stimulus and write the name WCL read.
- 7) Then OFF the lens in focused.

**Explain it:** Explain the following about the EECB (Euler-Charney-Bjerknes) theorem.

- [illegible]

**Field 11.** When the note form is CPM, the form can be checked if it is stamped or by observing the date on page 3 of the collection record submission.

- It's the same old struggle of whether to  
be seen or heard in the eyes of the world.



Figure 1. The effect of the number of trials on the number of correct responses. The number of correct responses was significantly higher for the 10 trials condition than for the 5 trials condition. Error bars represent the standard error of the mean.

- [illegible]

**Keywords:** child sexual abuse; disclosure; disclosure strategies

10. How about 100 for power 0.9, confidence 0.95

**Table 1**

To eliminate the difference in the degree of the ball element attached to the tire for detecting the position of the tire life, either double-ball life or single-ball effect.

Display	Two digit/segment
Measurement Point	RTN display of PWT or TV number
Measuring Instrument	
Adjustment Page	F
Adjustment Address	0K, 0F
Specified Value	12.0-16.0 during 001-0010 04 to 06 during 00.00-01.000

1000

- 1) Page 4, address 00, data 00
- 2) Page 1, address 00, data 00
- 3) Set data 01 on page 01, address 00, and press the PAUSE button of the following remote commander.
- 4) Set data 00 on page 01, address 00.
- 5) Set data 00 on page 4, address 00, and press the PAUSE button of the following remote commander.
- 6) Set data 00 on page 0, address 00, and press the PAUSE button of the following remote commander.
- 7) Set data 00 on page 0, address 00, and press the PAUSE button of the following remote commander.
- 8) Read the OSD display data (the bottom two digits of the display data at the bottom right of the TV or the monitor TV display), and set to 00.
- 9) Set data 00 on page 0, address 00, and press the PAUSE button of the following remote commander.
- 10) Read the OSD display data, and set to 00.
- 11) Set data 00 on page 4, address 00, and press the PAUSE button of the following remote commander.
- 12) Read the OSD display data, and set to 00.
- 13) Set data 00 on page 0, address 00, and press the PAUSE button.
- 14) Read the OSD display data, and set to 00.
- 15) Convert W, W<sub>0</sub>, X, X<sub>0</sub> to decimal notation, and obtain W<sub>0</sub>, X<sub>0</sub>, Y<sub>0</sub>, Z<sub>0</sub>. (Refer to Table 7-1-1. "Standardized coordinate notation (non-zero value)")
- 16) Calculate X<sub>0</sub>' using the following equation (decimal notation substitution).
 

$$A \cdot (W_0 - X_0) - W_0 = X_0'$$
Equation 1

$$B \cdot (W_0 - X_0) = X_0'$$
Equation 2

$$X_0' = \frac{B \cdot (W_0 - X_0) - (W_0 \cdot X_0)}{A - B}$$
Equation 3



- 17) Convert  $X1'$  to hexadecimal notation, and obtain  $X1$ .  
(Round off to one decimal place)
- 18) Set data:  $X1$  to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
- 19) Change the data of page: F, address: 07, and adjust the DDS display data to "34".
- 20) Press the PAUSE button of the adjusting remote commander.
- 21) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 22) Read the DDS display data, and set to  $W0$ . If  $W0$  lies within the "B4" to "B8" range, perform "Processing after completing adjustments". If it lies outside the range, perform the following adjustments.
- 23) Convert  $W0$  to hexadecimal notation, and obtain  $W0'$ .
- 24) Calculate  $X2'$  using the following equations (decimal notation calculation).  

$$C' = W0' - B' - 52 \dots \dots \dots \text{Equation 4}$$

$$X2' = \frac{(130 - B') \times (X1' - 48) + 48 \times C'}{C'} \dots \dots \dots \text{Equation 5}$$

( $X1'$  and  $B'$  are values obtained from equations 2 and 3)
- 25) Convert  $X2'$  to hexadecimal notation and obtain  $X2$ .  
(Round off to one decimal place)
- 26) Set data  $X2$  to page: F, address: 06, and press the PAUSE button of the adjusting remote commander.
- 27) Change the data of page: F, address: 07, and adjust the DDS display data to "B6".
- 28) Press the PAUSE button of the adjusting remote commander.
- 29) Set data: 01 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 30) Check that the DDS display data lies within the "32" to "36" range.

Processing after Completing Adjustments

- 1) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Page D protect mode setting.  
Page: 1, address: 00, data: 00

## 12. SYNC Level Check (VC board)

Subject	Not required
Measurement Point	TP607
Measuring Instrument	Oscilloscope
Specified Value	$A=140 \pm 10 \text{ mV}$

Adjusting method:

- 1) Page: 6, address: 00, data: 01
- 2) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Check that the SYNC level (A) satisfies the specified value.

Processing after completing adjustments

- 1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

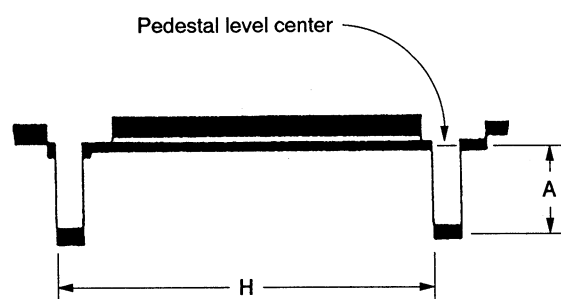


Fig. 7-1-8.

## 13. BURST Level Check (VC board)

Subject	Not required
Measurement Point	TP609
Measuring Instrument	Oscilloscope
Specified Value	$A=140 \pm 15 \text{ mVp-p}$

Adjusting method:

- 1) Page: 6, address: 00, data: 01
- 2) Set data: 03 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Check that the Burst level (A) satisfies the specified value.

Processing after completing adjustments

- 1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

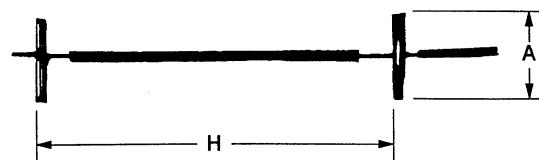


Fig. 7-1-9.

- 17) Convert  $X_2$  to hexadecimal notation, and obtain  $X_2$ .  
(Round off to one decimal place)
- 18) Set data  $X_2$  to page 1, address 05, and press the PALSR button of the adjusting remote commander.
- 19) Change the data of page 1, address 07, and adjust the DCR display data to "54".
- 20) Press the PALSR button of the adjusting remote commander.
- 21) Set data 05 to page 4, address 04, and press the PALSR button of the adjusting remote commander.
- 22) Read the DCR display data, and set to 00, 0.00 (see within the "04" to "04" range, perform "Processing after completing adjustment". If it is outside the range, perform the following adjustment).
- 23) Convert  $W_2$  to hexadecimal notation, and obtain  $W_2$ .
- 24) Calculate  $B_2$  using the following equation (decimal notation calculation).

$$C_2 - 0.05 = B_2 - 0 \quad \text{Equation 4}$$

$$22 \times 0.05 = 0.01125 \times C_2 - 0.05 \times 0.05 \quad \text{Equation 5}$$

- ( $C_2$  and  $B_2$  are values obtained from equations 4 and 5)
- 25) Convert  $B_2$  to hexadecimal notation and obtain  $B_2$ .  
(Round off to one decimal place)
- 26) Set data  $B_2$  to page 1, address 05, and press the PALSR button of the adjusting remote commander.
- 27) Change the data of page 1, address 07, and adjust the DCR display data to "54".
- 28) Press the PALSR button of the adjusting remote commander.
- 29) Set data 05 to page 4, address 04, and press the PALSR button of the adjusting remote commander.
- 30) Check that the DCR display data lies within the "04" to "04" range.

#### Processing after Completing Adjustment

- 1) Set data 05 to page 4, address 05, and press the PALSR button of the adjusting remote commander.
- 2) Set data 05 to page 4, address 04, and press the PALSR button of the adjusting remote commander.
- 3) Page 0 (normal mode setting).  
Page 1, address 04, data 00

#### 12. BTHC Level Check (YC board)

Subject	Part required
Measurement Point	TP907
Measuring Instrument	Oscilloscope
Specified Value	Ac=0.02 (20 mV)

##### Adjusting method

- 1) Page 4, address 05, data 00
- 2) Set data 05 to page 4, address 04, and press the PALSR button of the adjusting remote commander.
- 3) Check that the BTHC level (AC) satisfies the specified value.

##### Processing after completing adjustment

- 1) Set data 05 to page 4, address 04, and press the PALSR button of the adjusting remote commander.



Fig. 7-1-8.

#### 13. BURST Level Check (YC board)

Subject	Part required
Measurement Point	TP908
Measuring Instrument	Oscilloscope
Specified Value	Ac=0.01 (10 mVp-p)

##### Adjusting method

- 1) Page 4, address 05, data 00
- 2) Set data 05 to page 4, address 04, and press the PALSR button of the adjusting remote commander.
- 3) Check that the BURST level (AC) satisfies the specified value.

##### Processing after completing adjustment

- 1) Set data 05 to page 4, address 04, and press the PALSR button of the adjusting remote commander.



Fig. 7-1-9.

## 14. Picture Frame Setting

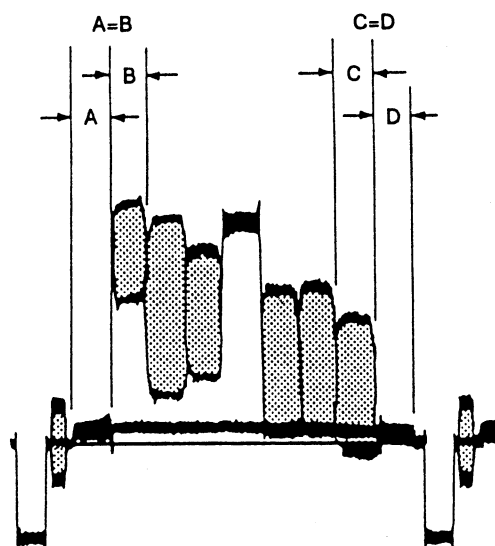
Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor.
Specified Value	$A=B, C=D, t=0 \pm 0.1 \text{ msec}$

Setting method:

- 1) Turn the auto focus off.
- 2) Adjust the focus.
- 3) Adjust the zoom and the camera direction, and set to the specified position.
- 4) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "color bar chart standard picture frame".

Check on the oscilloscope

### 1. horizontal period



### 2. Vertical period

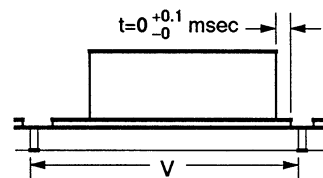


Fig. 7-1-10.

Check on the TV monitor

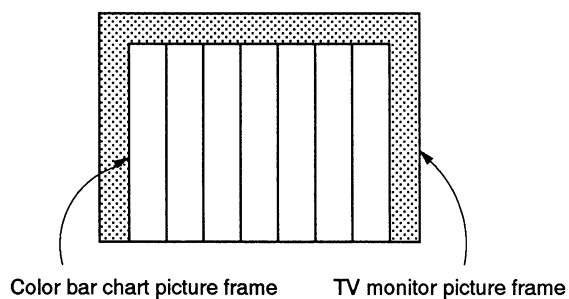


Fig. 7-1-11.

#### 14. Picture Frame Setting

Subject	Color bar chart mounted picture frame
Measurement Value	Value output screen
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	Ax/B, Cx/B, and y 0.1 mm

##### Setting method:

- 1) Turn the scan lines off.
- 2) Adjust the focus.
- 3) Adjust the scan and the camera direction, and set to the specified position.
- 4) Check the position of the picture frame on the monitor display, and adjust the picture frame to this position in following circumstances using "color bar chart mounted picture frame".

##### Check on the oscilloscope

##### 1. Horizontal period



##### 2. Vertical period



Fig. T-10-10

##### Check on the TV monitor



Fig. T-10-11

## 15. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that the proper color reproduction is produced.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	08 (RED MATRIX), 09 (BLUE MATRIX), 0A (B-Y HUE), 0B (R-Y HUE)
Specified Value	All color luminance points should settle within each color reproduction frame.

Adjusting method:

- 1) Page: 6, address: 00, data: 01
- 2) Set data: 00 to page: 6, address: 03.
- 3) Set data: F1 to page: F, address: 10, and press the PAUSE button of the adjusting remote commander.
- 4) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
- 5) Change the data of addresses 08, 09, 0A and 0B of page: F, and settle each color luminance point in each color reproduction frame.

**Note 1:** Be sure to press the PAUSE button of the adjusting remote commander before changing the addresses.

If not, the new data will not be written to the memory.

- 6) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

- 1) Set data: E0 to page: F, address: 10 and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 10 to page: 6, address: 03.

For CCD-TR42/TR70/TR72/TR80

Burst position

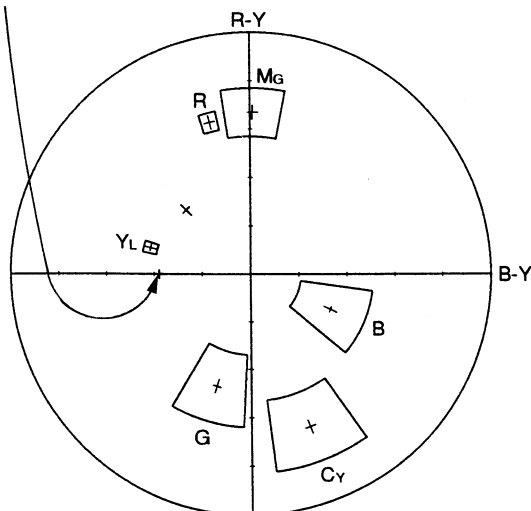


Fig. 7-1-12.

For CCD-TR82/TR550

Burst position

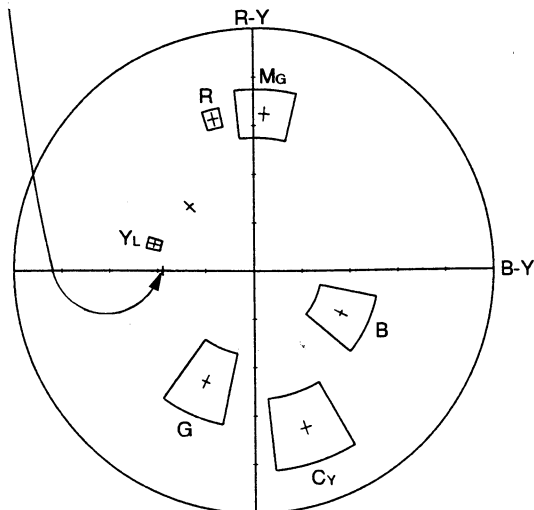


Fig. 7-1-13.

For CCD-TR400/TR750

Burst position

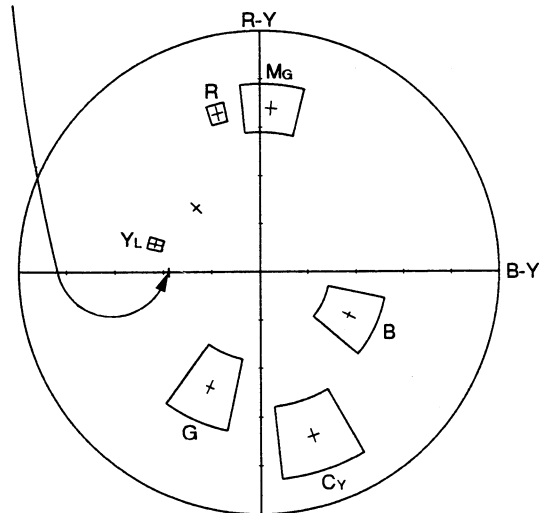


Fig. 7-1-14.

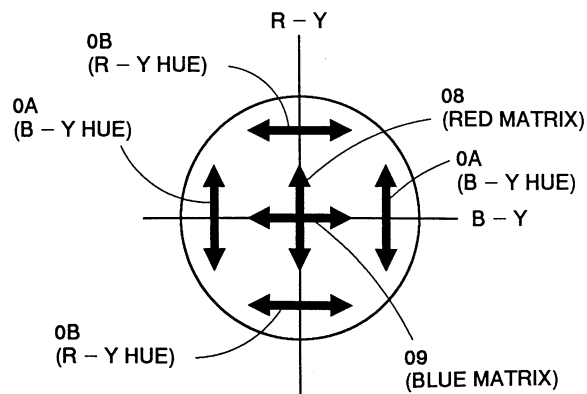


Fig. 7-1-15. Direction of the Movements of the Adjustment Address and Luminance Point

### 18. Color Reproduction Adjustment

Adjust the color reproduction matrix coefficients so that the proper color reproduction is possible.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Video scope
Adjustment Page	17
Adjustment Address	08 (RED MATRIX), 09 (G1, G2, GA, GB, G3), 0A (R-Y, R-G, G-B, Y, B-Y, B-B)
Specified Value	All color bar chart points should match within each color reproduction frame.

#### Adjusting method

- 1) Page 6, address (R) data (R)
- 2) Set data 00 to page 6, address (R)
- 3) Set data 70 to page 6, address 10, and press the PAUSE button of the adjusting remote commander.
- 4) Adjust the G1(G) and PPR(R) of the video scope, and adjust the third luminance point in the test pattern of the color reproduction frame.
- 5) Change the data of addresses (R), (G), (B), and (B) of page 6, and write each color bar chart point in each color reproduction frame.

Note 1: Be sure to press the PAUSE button of the adjusting remote commander before changing the address.

If not, the new data will not be written in the memory.

- 6) Press the PAUSE button of the adjusting remote commander.

#### Proceeding after completing adjustments

- 1) Set data 00 to page 6, address 10 and press the PAUSE button of the adjusting remote commander.
- 2) Set data 10 to page 6, address 00.

### For CCD-TR80/TR80/TR80/TR80

Test pattern



Fig. 7-1-12

### For CCD-TR80/TR80

Test pattern



Fig. 7-1-13

### For CCD-TR800/TR800

Test pattern



Fig. 7-1-14



Fig. 7-1-15. Direction of the movements of the Adjustment Address and Luminance Point

## 16. IRIS IN/OUT Adjustment (VC board)

For the unit to judge if the white balance is indoors or outdoors in auto white balance operations, measure the light level and write it in the EEPROM.

If the level is not correct, the white balance will not be accurate.

Subject	White pattern
Measurement Point	DDS display of EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	13, 14

Adjusting method:

- 1) Page: 6, address: 00, data: 01
- 2) Release the page D protect.  
Page: 1, address: 00, data: 01
- 3) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 0E to page: 6, address: 02.
- 5) Set data: 0B to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Read the DDS display data (Note 1), and take the upper two digits as D1 and the lower two as D2.
- 7) Convert D1 to a decimal number and obtain D1'. (Refer to Table 7-1-4. "Hexadecimal Notation-Decimal Notation Conversion Table".)
- 8) Calculate D3' using the following equations. (Equations 1 and 2 are for decimal notation calculation)
 

When  $D2 \geq D0$   
 $D3' = D1' - 21 \dots \dots \dots \text{Equation 1}$

When  $D2 < D0$   
 $D3' = D1' - 22 \dots \dots \dots \text{Equation 2}$
- 9) Convert D3' to a hexadecimal number and obtain D3.
- 10) Set D3 to page: F, address: 13, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: 09 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.  
(IND0.5 SHUTTER mode setting)
- 12) Read the DDS display data (Note 1), and take the upper two digits as D4 and the lower two as D5.
- 13) Convert D4 to a decimal number and obtain D4'. (Refer to Table 7-1-4. "Hexadecimal Notation-Decimal Notation Conversion Table".)
- 14) Calculate D6' using the following equations. (Equations 3 and 4 are for decimal notation calculation)
 

When  $D5 \geq F0$   
 $D6' = D4' - 13 \dots \dots \dots \text{Equation 3}$

When  $D5 < F0$   
 $D6' = D4' - 14 \dots \dots \dots \text{Equation 4}$
- 15) Convert D6' to a hexadecimal number and obtain D6.
- 16) Set D6 to page: F, address: 14, and press the PAUSE button of the adjusting remote commander.

**Note 1:** The right four digits of the display data at the right bottom side of the EVF and monitor TV is the LIGHT LEVEL data. If the lower digits change severely and cannot be read, record it on a tape once, play it back by frame feeding, and obtain the average value.

Processing after Completing Adjustments

- 1) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 1, address: 00.
- 3) Set data: 00 to page: 6, address: 00, and press the PAUSE button of the adjusting remote commander.
- 4) Set data: 00 to page: 6, address: 02.

### 16. **WIDE BRIGHT ADJUSTMENT (WB) Error3**

For the auto-Judge if the white balance is failure or variation is over white balance operation, measure the light level and value it to the EEPROM.

If the level is over-current, the white balance will not be accurate.

Subject	White pattern
Information/Title	LED display of EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjusted Address	13, 14

#### Adjusting method

- 1) Page F, address 00, data 00
- 2) Release the page/F protect.  
Page F, address 00, data 00
- 3) Set data 00 to page F, address 00, and press the **PAUSE** button of the adjusting remote commander.
- 4) Set data 00 to page F, address 00.
- 5) Set data 00 to page F, address 00, and press the **PAUSE** button of the adjusting remote commander.
- 6) Read the LED display data (Data 0) and enter the upper two digits as D0 and the lower two as D1.
- 7) Convert D0 to a decimal number and obtain D0'. (Refer to Table 7-1-4, "Mathematical Function/Decimal Fraction Conversion Table".)
- 8) Calculate D0' using the following equations. (Equation 1 and 2 are for decimal fraction calculation.)  
When  $D0 \geq 00$   
$$D0' = D0 - 0.5 \text{ ..... Equation 1}$$
  
When  $D0 < 00$   
$$D0' = D0 + 0.5 \text{ ..... Equation 2}$$
- 9) Convert D0' to a hexadecimal number and obtain D0.
- 10) Set D0 to page F, address 13, and press the **PAUSE** button of the adjusting remote commander.
- 11) Set data 00 to page F, address 00, and press the **PAUSE** button of the adjusting remote commander.  
(MODEL SHOOTING mode setting)
- 12) Read the LED display data (Data 1), and enter the upper two digits as D2 and the lower two as D3.
- 13) Convert D2 to a decimal number and obtain D2'. (Refer to Table 7-1-4, "Mathematical Function/Decimal Fraction Conversion Table".)
- 14) Calculate D2' using the following equations. (Equation 3 and 4 are for decimal fraction calculation.)  
When  $D2 \geq 00$   
$$D2' = D2 - 0.1 \text{ ..... Equation 3}$$
  
When  $D2 < 00$   
$$D2' = D2 + 0.1 \text{ ..... Equation 4}$$
- 15) Convert D2' to a hexadecimal number and obtain D2.
- 16) Set D2 to page F, address 14, and press the **PAUSE** button of the adjusting remote commander.

**Note 1)** The right four digits of the display data at the right bottom side of the EVF and monitor TV is the LIGHT LEVEL data. If the lower digits change unusually and cannot be read, reset it to a factory value, play it back by focus finding, and obtain the average value.

#### Processing after Completing Adjustment

- 1) Set data 00 to page F, address 00, and press the **PAUSE** button of the adjusting remote commander.
- 2) Set data 00 to page F, address 00.
- 3) Set data 00 to page F, address 00, and press the **PAUSE** button of the adjusting remote commander.
- 4) Set data 00 to page F, address 00.



### 17. MAX GAIN Adjustment (VC board)

Correct the differences in the minimum illuminance.

If the illuminance is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	White pattern standard picture frame
Measurement Point	TP607 (CAM Y)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	15
Specified Value	CCD-TR42/TR70/TR72/TR80/TR430 $A=275 \pm 10 \text{ mV}$ CCD-TR82/TR550 $A=195 \pm 10 \text{ mV}$ CCD-TR400/TR750 $A=210 \pm 10 \text{ mV}$

Adjusting method:

- 1) Page: 6, address: 00, data: 01
- 2) Set data: 19 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 3) Change the data of page: F, address: 15, and adjust so that the Y OUT signal level (A) becomes the specified value.  
**Note:** The data of address: 15 should be 70 to FF.
- 4) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

- 1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

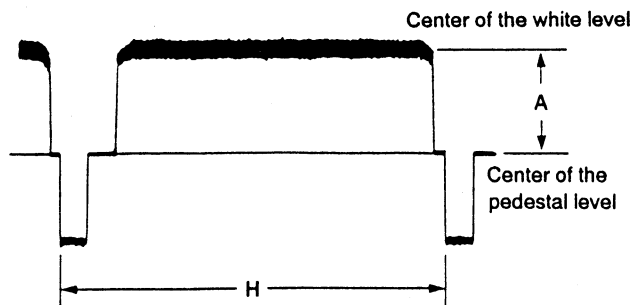


Fig. 7-1-16.

### 18. Auto White Balance Standard Data Input

Subject	White pattern standard picture frame
Adjustment Page	F
Adjustment Address	0C, 0D, 0E, 0F

Adjusting method:

- 1) Turn the power of the unit OFF/ON.
- 2) Page: 6, address: 00, data: 01
- 3) Check that the data of page: 6, address: 11 is 00.
- 4) Wait for 2 seconds.
- 5) Set data: 11 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 0D to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.  
 (When the standard data is taken in, the data will be automatically input to addresses 0C to 0F of page F.)
- 7) Check that the data of page: 6, address: 11 is 01.

Processing after completing adjustments

- 1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.

### 17. BIAS GAIN Adjustment (PC board)

Correct the difference in the minimum illuminance.

If the illuminance is not constant, the image level required for white subjects is low (illuminance will not be adjusted (dark)).

Subject	White pattern standard plane (mm)
Measurement Point	1P50V (CAM Y)
Measuring Instrument	Oscilloscope
Adjustment Page	8
Adjustment Address	11
Specified Value	000-7B40700V7B70707B70A00 to 010 ± 10µV 000-7B8070A00 to 010 ± 10µV 000-7B4070000 to 010 ± 10µV

Adjusting method

- 1) Page 8, address 01, data 01
- 2) Set data 0F to page 8, address 01, and press the PAUSE button of the adjusting remote commander.
- 3) Change the data of page 8, address 01, and adjust so that the Y-GAIN signal level (A) becomes the specified value.  
Note: The data of address 11 should be 00 to 0F.
- 4) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

- 1) Set data 00 to page 8, address 01, and press the PAUSE button of the adjusting remote commander.

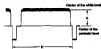


Fig. 3-8-18.

### 18. Auto White Balance (Standard Data Input)

Subject	White pattern standard plane (mm)
Adjustment Page	8
Adjustment Address	02, 03, 05, 0F

Adjusting method

- 1) Turn the power of the unit OFF/ON.
- 2) Page 8, address 02, data 01
- 3) Check that the data of page 8, address 01 is 00.
- 4) Wait for 1 second.
- 5) Set data 11 to page 8, address 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data 0F to page 8, address 01, and press the PAUSE button of the adjusting remote commander.  
(When the standard data is taken in, the data will be automatically input to addresses 02 to 0F of page 8.)
- 7) Check that the data of page 8, address 11 is 01.

Processing after completing adjustments

- 1) Set data 00 to page 8, address 01, and press the PAUSE button of the adjusting remote commander.

## 19. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.

If it is not correct, auto white balance and color reproducibility will be poor.

Subject	White pattern standard picture frame
Filter	Filter C14 for color temperature correction
Measurement Point	Check with the DDS display on the EVF or TV monitor
Measuring Instrument	
Adjustment Page	F
Adjustment Address	11 (NORM R) 12 (NORM B)
Specified Value	CCD-TR42/TR70/TR72/TR80/ TR400/TR530/TR750 R ratio: 2A40 to 2AC0 B ratio: 5E00 to 5F00 CCD-TR82/TR550 R ratio: 2B40 to 2BC0 B ratio: 5E00 to 5F00

Adjusting method:

- 1) Place the C14 filter for color temperature correction on the lens.
- 2) Page: 1, address: 00, data: 01
- 3) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 4) Page: 6, address: 00, data: 01
- 5) Set data: D0 to page: F, address: 10, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 04 to page: 6, address: 02.
- 7) Change the data of page: F, address: 11, and adjust the average value of the DDS display data (the display data at the bottom right of the EVF or the TV monitor) to the R ratio specified value.
- 8) Press the PAUSE button of the adjusting remote commander.
- 9) Set data: 05 to page: 6, address: 02.
- 10) Change the data of page: F, address: 12, and adjust the average value of the DDS display data to the B ratio specified value.
- 11) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

- 1) Set data: 00 to page: F, address: 10, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
- 3) Set data: 00 to page: 6, address: 02.
- 4) Page D protect mode setting.  
Page: 1, address: 00, data: 00

## 20. White Balance Check

Subject	White pattern standard picture frame
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 7-1-17. A to C

Checking method:

- 1) Check that the lens is not covered with either filter.
- 2) Page: 6, address: 00, data: 01
- 3) Set data: 0F to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 4) Check that the center of the white luminance point is within the circle shown in Fig. 7-1-17.A.
- 5) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 6) Set data: 23 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 7) Place the C14 filter on the lens.
- 8) Check that the center of the white luminance point settles in the circle shown in Fig. 7-1-17. B.
- 9) Remove the C14 filter, and place the ND filter 1.3 (1.0+0.3) on the lens.
- 10) Check that the center of the white luminance point settles in the circle shown in Fig. 7-1-17. C.

Processing after completing adjustments

- 1) Set data: 00 to page: 6, address: 01, and press the PAUSE button of the adjusting remote commander.
- 2) Set data: 00 to page: 6, address: 00, and press the PAUSE button.

## 18. Auto White Balance Adjustment

Adjust to the proper way white balance output data. If it is not correct, auto white balance test color reproducibility will be poor.

Subject	White pattern standard picture frame
Filter	Filter CM for color temperature correction
Measurement Point	Check with the OSD display on the DVP or TV monitor
Measuring Instrument	Vermorel
Adjustment Page	P
Adjustment Address	11 (OSD) 0 12 (OSD) 0
Specified Value	CCD-TR:0000000000000000 TR:0000000000000000 R ratio: 24.0% to 24.0% B ratio: 28.0% to 28.0% CCD-TR:0000000000000000 R ratio: 28.0% to 28.0% B ratio: 28.0% to 28.0%

### Adjusting method

- Place the CM filter for color temperature correction on the lens.
- Page 1, address 00, data 00
- Set data 01 on page 0, address 00, and press the PAUSE button of the adjusting remote commander.
- Page 4, address 00, data 00
- Set data 00 on page P, address 10, and press the PAUSE button of the adjusting remote commander.
- Set data 00 on page 0, address 00.
- Change the data of page P, address 11, and adjust the average ratio of the OSD display data (the display data at the bottom right of the DVP or the TV monitor) to the R ratio specified value.
- Press the PAUSE button of the adjusting remote commander.
- Set data 00 on page 4, address 00.
- Change the data of page P, address 12, and adjust the average ratio of the OSD display data to the B ratio specified value.
- Press the PAUSE button of the adjusting remote commander.

### Processing after completing adjustments

- Set data 00 on page P, address 10, and press the PAUSE button of the adjusting remote commander.
- Set data 00 on page 0, address 00, and press the PAUSE button of the adjusting remote commander.
- Set data 00 on page 4, address 00.
- Page 0 pressed auto setting.  
Page 1, address 00, data 00

## 19. White Balance Check

Subject	White pattern standard picture frame
Filter	Filter CM for color temperature correction ND filter 1.6 and 0.3
Measurement Point	White output monitor
Measuring Instrument	Vermorel
Specified Value	Fig. 7-1-17, A and C

### Checking method

- Check that the lens is set correct with white filter.
- Page 4, address 00, data 00.
- Set data 00 on page 4, address 00, and press the PAUSE button of the adjusting remote commander.
- Check that the center of the white balance point is within the circle shown in Fig. 7-1-17, A.
- Set data 00 on page 0, address 00, and press the PAUSE button of the adjusting remote commander.
- Set data 00 on page 4, address 00, and press the PAUSE button of the adjusting remote commander.
- Place the CM filter on the lens.
- Check that the center of the white balance point is within the circle shown in Fig. 7-1-17, B.
- Remove the CM filter, and place the ND filter 1.6 (1.0-0.3) on the lens.
- Check that the center of the white balance point is within the circle shown in Fig. 7-1-17, C.

### Processing after completing adjustments

- Set data 00 on page 4, address 00, and press the PAUSE button of the adjusting remote commander.
- Set data 00 on page 0, address 00, and press the PAUSE button.

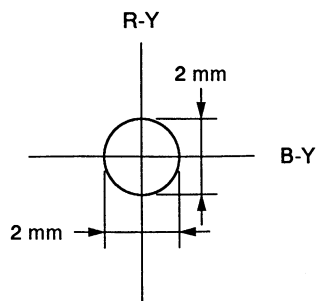


Fig. 7-1-17. A

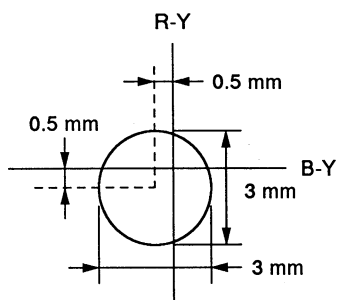


Fig. 7-1-17. B

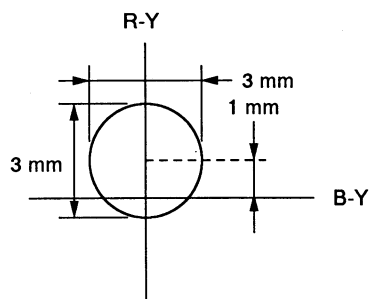


Fig. 7-1-17. C

## 21. VIDEO OUT Level Check

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal (Terminated at $75 \Omega$ )
Measuring Instrument	Oscilloscope
Specified Value	Y level= $660 \pm 40$ mV SYNC level= $285 \pm 20$ mV BURST level= $285 \pm 20$ mV

Checking method:

- 1) Check that the Y level, SYNC level and BURST level satisfy the specified values.

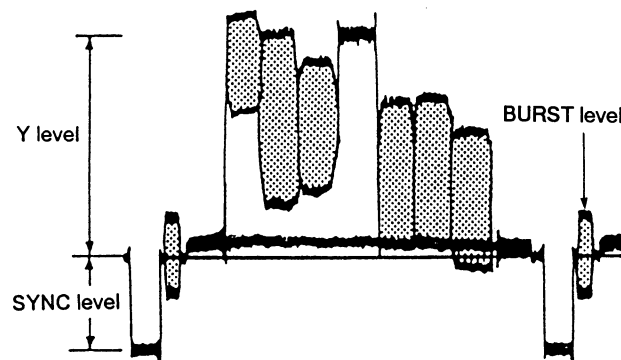


Fig. 7-1-18.



Fig. 3-1-17, A



Fig. 3-1-17, B



Fig. 3-1-17, C

#### 31. VIBRO (G/F) Level (Shock)

Subject	Check for characteristic pattern (Shock)
Measurement Point	Vibration output level (measured at 10 G)
Measuring Instrument	Oscilloscope
Specified Value	Y level: 40 mV SYNC level: 10 mV BUST level: 20 mV

#### Checking method

- Check that the Y level, SYNC level and BUST level satisfy the specified values.



Fig. 3-1-18

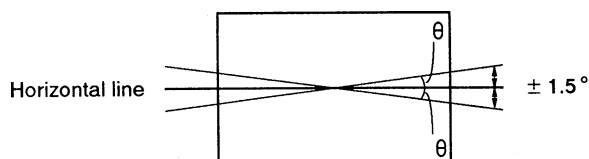
### 1-3. ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS (CCD-TR42/TR72/TR82/TR400/TR430/ TR550/TR750)

#### 1-3-1. Horizontal Slant Adjustment

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Monoscope section
Specified Value	$\pm 1.5^\circ$

Adjusting method:

- 1) Adjust RV904 (BRIGHT) so that the CRT can be seen easily and clearly.
- 2) Loosen the DY (deflection yoke) tightening screw.
- 3) Rotate DY, and adjust the image so that it is horizontal.
- 4) Tighten the DY tightening nut.  
(Do not tighten it too tightly.)



Specified value: The image should be within  $\pm 1.5^\circ$  of the horizontal line.

Fig. 7-1-19.

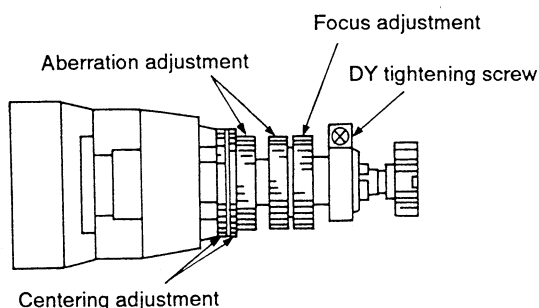


Fig. 7-1-20.

#### 1-3-2. Centering Adjustment

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Monoscope section
Specified Value	$\pm 4\%$

Adjusting method:

- 1) Use the centering adjustment ring and adjust so that the left, right, top, and bottom sides of the display are uniform.  
(Refer to Fig. 7-1-20.)

**Note:** As the centering position changes due to earth magnetism, rotate it  $360^\circ$  in the horizontal direction, and adjust with the center section of the modifying position.

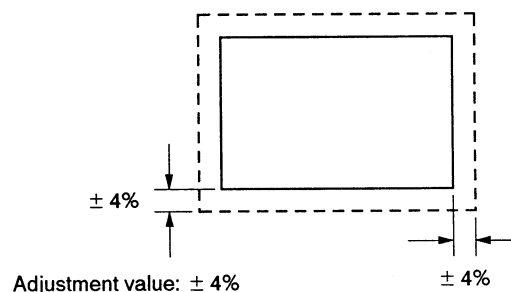


Fig. 7-1-21.

#### 1-3-3. Focus Adjustment

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Monoscope section

Adjusting method:

- 1) Adjust the focus ring to obtain the optimum focus.  
(Refer to Fig. 7-1-20.)





#### 1-3-4. Aberration Adjustment

Model	E-E
Signal	Dot pattern
Specified Value	$T < 2 \cdot D$ , $F < D$

Adjusting method:

- 1) Adjust the aberration adjustment ring so that the tracing of the dot becomes less than twice the diameter of the dot, or the fan aberration becomes less than the diameter of the dot.
- 2) If the centering becomes displaced here, perform the centering adjustment from the beginning again.



Fig. 7-1-22.

#### 1-3-5. Horizontal Amplitude Adjustment (VF-65 board)

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Monoscope section
Adjusting Element	C909
Specified Value	$6 \pm 2\%$

Adjusting method:

- 1) Rotate RV903, and adjust the top and bottom sides of the monoscope image to the top and bottom edges of the display.
- 2) Rotate RV904 so that the brightness is the normal level.
- 3) Adjust the pattern (A) of the H size adjustment capacitor (C909) to "short" or "open", so that the horizontal direction over scan becomes  $6 \pm 2\%$  (Left and right totals). (Refer to Fig. 7-1-24.)

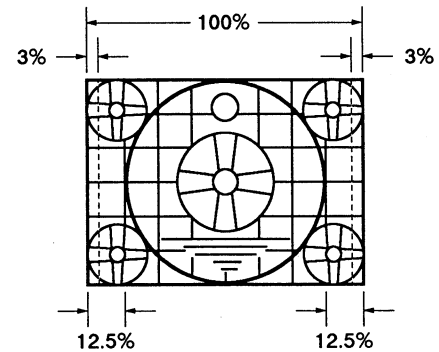
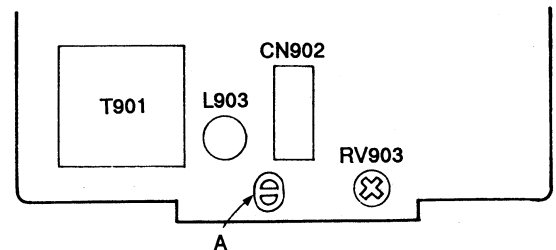


Fig. 7-1-23.



VF-65 board (Component side)

Section A	Size H
Open	Small
Short	Big

Fig. 7-1-24.

### 1-3-4. Astigmatism Adjustment

Model	S-8
Signal	Dot pattern
Specified Value	$T \leq 0.1$ , $P \leq 0$

#### Adjusting method

- Adjust the astigmatism adjustment (Fig. 6) so that the focusing of the dot becomes less than twice the diameter of the dot, or the line direction becomes less than five times the diameter of the dot.
- If the focusing becomes abnormal here, perform the centering adjustment from the beginning again.



Fig. 7-1-22.

### 1-3-5. Horizontal Amplitude Adjustment (S7-02 board)

Model	Playback
Signal	Alignment tape For checking operation (S701-000P) Microscope method
Adjusting Element	CORR
Specified Value	0 ± 2%

#### Adjusting method

- Insert S7003, and adjust the top and bottom sides of the microscope image to the top and bottom edges of the display.
- Insert S7004 so that the brightness is the normal level.
- Adjust the pattern (X) of the H amp adjustment capacitor (CORR) to "short" or "open", so that the horizontal direction over scan becomes 0 ± 2% (left and right sides). (Refer to Fig. 7-1-24.)



Fig. 7-1-23.



Section A	Size H
Open	Small
Short	Big

Fig. 7-1-24.

### 1-3-6. Vertical Amplitude Adjustment (VF-65 board)

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Monoscope section
Adjusting Element	RV903
Specified Value	$5 \pm 2\%$

Adjusting method:

- 1) Adjust RV903 so that the vertical direction over scan becomes  $5 \pm 2\%$  (Top and bottom totals).

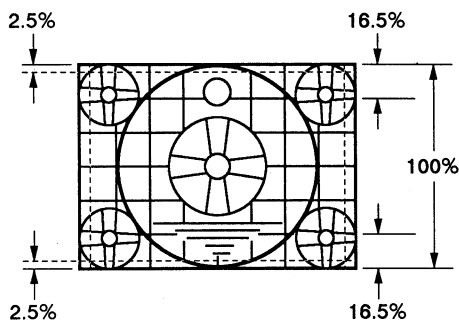


Fig. 7-1-25.

### 1-3-7. Brightness Adjustments (VF-65 board)

Model	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Monoscope section
Adjusting Element	RV904

Adjusting method:

- 1) Rotate RV904, and adjust so that the bright/dark sections of the gray scale are displayed correctly. (The bright section should be unsatisfactory till the cross hatch appears vague in the monoscope circle. The dark section should be unsatisfactory till the darkest section and the second darkest section of the gray scale cannot be differentiated.)

### 1-3-8. Horizontal Amplitude, Vertical Amplitude, Focus Check

"1-3-5. Horizontal Amplitude Adjustment" and "1-3-6. Vertical Amplitude Adjustment" should both satisfy the specified values. If not, perform the adjustments from the beginning again. In this case, perform [1-3-7. Brightness, Contrast Adjustments] again. Moreover, check the focus, and if it found to be vague, perform "1-3-3. Focus Adjustment" and "1-3-4. Aberration Adjustment".

### 1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS (CCD-TR70/TR80)

**Note 1:** The backlight (fluorescent tube) is driven by a 800 Vp-p, 16 kHz AC power supply.

Therefore, be careful not to touch the backlight holder as you will receive an electric shock.

**Note 2:** When replacing the LCD unit, ensure there will be no damages by static electricity.

#### [Adjusting connector]

Some measuring points for adjusting the view-finder are concentrated at CN902 of the VF-67 board. Connect the measuring equipments via the measuring pin tool. The following table lists the pin numbers and signal names of CN902.

Pin No.	Signal Name	Pin No.	Signal Name
1	LC COM	2	EVF GND
3	G OUT	4	13.5V
5	NC	6	12V
7	R OUT	8	B OUT
9	NC	10	PCO

Table 7-1-6.

#### [Power Supply Voltage]

Adjust the power supply voltage for the battery pin so that Pin ⑦ (EVF UNREG) of CN851 of the VF-66 board becomes  $6.0 \pm 0.1$  Vdc.

#### [Video Input Signal for Adjusting]

If the signal column specifies "Color bar signal whose chroma signal and burst signal are turned off", input a color bar signal whose chroma signal and burst signal have been turned off to the video input pin as the video input signal for adjusting. Check that the signal level of Pin ⑪ of CN851 of the VF-66 board is  $1.0 \pm 0.12$  Vp-p before adjusting.

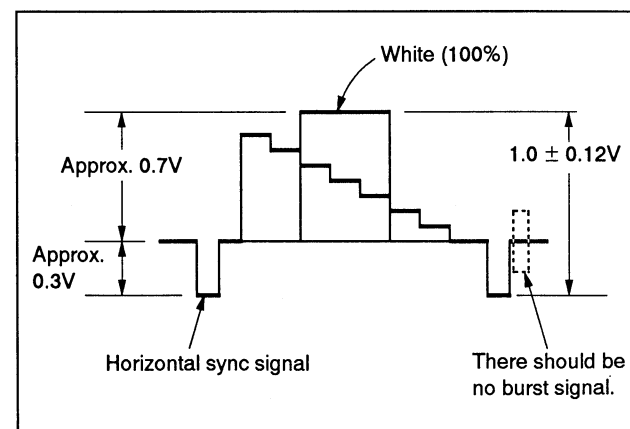


Fig. 7-1-26. Color bar signal whose chroma signal and burst signals are turned off

#### 1-3-6. Vertical Amplitude Adjustment (YP-68 board)

Model	Playback
Signal	Alignment tape (For checking operation (FM01-0201) Microscope section)
Adjusting Element	VR-601
Specified Value	4 ± 2%

##### Adjusting method

- Adjust VR-601 so that the vertical direction level scale becomes 3.2. (2% (Up and Down) scale).



Fig. 1-1-26.

#### 1-3-7. Brightness Adjustment (YP-68 board)

Model	Playback
Signal	Alignment tape (For checking operation (FM01-0201) Microscope section)
Adjusting Element	VR-701

##### Adjusting method

- Enter (VR-701), and adjust so that the brightness section of the gray scale are displayed normally. (The bright section should be satisfactory all the time level appears again in the microscope slide. The dark section should be satisfactory all the instant section and the normal instant section of the gray scale must be differentiated.)

#### 1-3-8. Horizontal Amplitude, Vertical Amplitude, Focus Check

"1-3-3. Horizontal Amplitude Adjustment" and "1-3-4. Vertical Amplitude Adjustment" should both satisfy the specified value. If not, perform the adjustments from the beginning again. In this case, perform [1-3-7. Brightness, Contrast Adjustment] again. Moreover, check the focus, and if it found to be right, perform "1-3-5. Focus Adjustment" and "1-3-4. Aberration Adjustment".

#### 1-4. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS (PCD-1107/1180)

**Note 1:** The backlight (document LED) is driven by a 600 Vp-p, 10 kHz AC power supply.  
(Therefore, be careful not to touch the backlight holder as you will receive an electric shock.)

**Note 2:** When replacing the LED unit, ensure there will be no damage by static electricity.

##### (Adjusting connection)

When connecting cables for adjusting the viewfinder are interconnected at CN902 of the YP-67 board. Connect the connecting equipment via the connecting pin head. The following table lists the pin numbers and signal names of CN902.

Pin No.	Signal Name	Pin No.	Signal Name
1	① GND	9	RF GND
2	S-OUT	10	SLIM
3	NC	11	10V
7	R-OUT	12	S-OUT
8	NC	13	PCD

Table 1-1-8.

##### (Power Supply Voltage)

Adjust the power supply voltage for the battery pin as the Pin ② (VCC1/CHRG2) of CN902 of the YP-68 board (between 1.0 ± 0.1 V).

##### (Video Input Signal for Adjusting)

If the signal section specifies "Color bar signal whose chroma signal and burst signal are turned off", input a color bar signal whose chroma signal and burst signal have been turned off to the video input pin or the video input signal for adjusting. Check that the signal level of Pin ② of CN902 of the YP-68 board is 1.0 ± 0.1 Vp-p before adjusting.

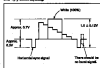


Fig. 1-1-28. Color bar signal whose chroma signal and burst signal are turned off

### 1. Current Consumption Adjustment (VF-66 board)

Adjust the luminance and color temperature of the back light. If these are not correct, the image will be brighter or darker than normal.

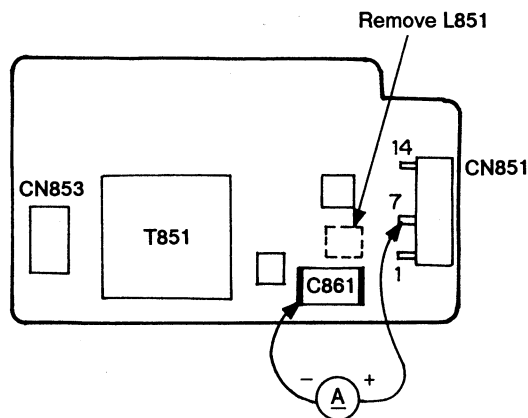
Mode	Stop
Signal	Color bar signal whose chroma signal and burst signal are turned off
Measurement Point	Remove L851 and measure + : Pin ⑦ of CN851 - : ⊕ pin of C861
Measuring Instrument	Ammeter
Adjustment Page	D
Adjustment Address	B7
Specified Value	$55 \pm 5$ mA

**Note 1:** Wait for 30 secs. after the power supply has been turned on before this adjustment.

**Note 2:** After adjusting, connect L851.

Adjusting method:

- 1) Check that the voltage of Pin ⑦ of CN851 is  $6.0 \pm 0.1$  Vdc.
- 2) Page: 1, address: 00, data: 01
- 3) Change the data of page: D, address: B7, and adjust the current consumption to  $55 \pm 5$  mA.
- 4) Press the PAUSE button of the adjusting remote command.



VF-66 BOARD Component side

Fig. 7-1-27.

### 2. Power Supply Voltage Check (VF-67 board)

Mode	Record
Measuring Instrument	Digital voltmeter
13.5V check	
Measurement Point	Pin ⑭ of CN901
Specified Value	$13.5 \pm 0.3$ Vdc
12.0V check	
Measurement Point	Pin ⑬ of CN901
Specified Value	$12.0 \pm 0.3$ Vdc

### 3. EVR Initial Data Input

Mode	STOP
Signal	Arbitrary
Adjustment Page	D

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Select page D, and input the data in the following table.  
**Note:** To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.

Address	Data
B0 (BRIGHT)	A0
B1 (COLOR)	AE
B2 (HUE)	95
B3 (SUB BRIGHT R)	7A
B4 (SUB BRIGHT B)	6A
B5 (CONTRAST)	70
B6 (VCO)	90
B7 (INVERTER CURRENT)	35
B8 (SUB CONTRAST R)	7A
B9 (SUB CONTRAST B)	7A
BA (GAMMA 1)	70
BB (GAMMA 2)	F0

### 1. Current Consumption Adjustment (VP-40 board)

Adjust the brightness and color temperature of the back light. If these are not correct, the image will be brighter or darker than normal.

Mode	Step
Signal	Color bar signal whose status signal and burst signal are turned off
Measurement Point	Resistor RMT and resistor 4 + Pin② of COM1 = ④ pin of COM1
Measuring/Instrument	Ammeter
Adjustment Page	D
Adjustment Address	07
Specified Value	20 ± 1 mA

**Note 1:** Wait for 30 sec. after the power supply has been turned on before this adjustment.

**Note 2:** After adjusting, measure LMT.

#### Adjusting method:

- Check that the voltage of Pin ② of COM1 is  $4.0 \pm 0.1$  Vdc.
- Page 1, address 00, item 00.
- Change the data of page D, address 07, and adjust the current consumption to  $20 \pm 1$  mA.
- Press the F4200 button of the adjusting remote command set.



VP-40 (0400) Component side

Fig. 7-4-49.

### 2. Power Supply Voltage Check (VP-47 board)

Mode	Signal
Measuring/Instrument	Digital multimeter
LCUV check	
Measurement Point	Pin ② of COM1
Specified Value	$10.1 \pm 0.2$ Vdc
LCU check	
Measurement Point	Pin ② of COM1
Specified Value	$7.00 \pm 0.2$ Vdc

### 3. EPROM Initial Data Input

Mode	STOP
Signal	Arbitrary
Adjustment Page	D

#### Adjusting method:

- Page 1, address 00, item 00.
- Select page D and input the data in the following table.  
**Note:** To write in the nonvolatile memory (EEPROM), press the F4000 button of the adjusting remote command set after the data is set.

Address	Data
00 (EFFECT)	40
01 (COLOR)	40
02 (H, R)	00
03 (SUB-BRIGHT B)	74
04 (SUB-BRIGHT G)	64
05 (CONTRAST)	00
06 (VCC)	00
07 (INVERTED CONTRAST)	00
08 (SUB-CONTRAST B)	74
09 (SUB-CONTRAST G)	74
0A (PHASMA 1)	00
0B (PHASMA 2)	00

#### 4. VCO Adjustment (VF-67 board)

Set the free running frequency of the VCO.

If it is not correct, the image will waver.

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑩ of CN902 (PCO)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	D
Adjustment Address	B6
Specified Value	$A=2.8 \pm 0.1V$

Adjusting method:

- 1) Check the GND level of the oscilloscope.
- 2) Page: 1, address: 00, data: 01
- 3) Change the data of page: D, address: B6, and adjust the PCO voltage (A) to the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.

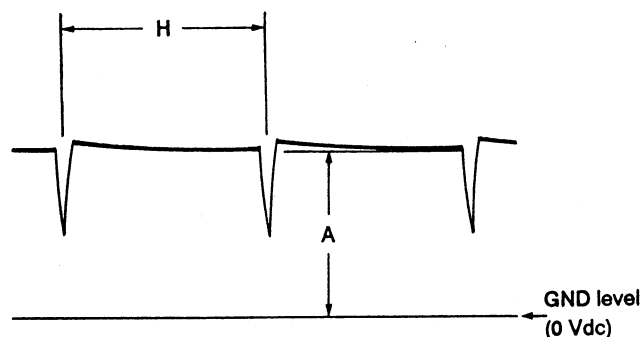


Fig. 7-1-28.

#### 5. Bright Adjustment (VF-67 board)

Adjust to the proper LCD panel driving video signal level.

If it is not correct, the image will be saturated (whitish) or blackish.

Mode	Record
Signal	No signal
Measurement Point	Pin ③ of CN902 (G OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	B0 (BRIGHT)
Specified Value	$A=7.0 \pm 0.1V$

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B0, and adjust the potential difference (A) between the reversed waveform pedestal and the non reversed waveform pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

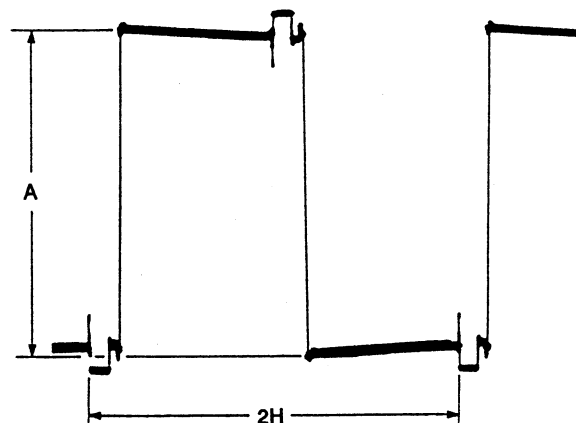


Fig. 7-1-29.

#### 4. VDD Adjustment (VF-67 board)

Set the low resting frequency of the PCC.  
If it is not correct, the image will waver.

Mode	Reset
Signal	Color bar
Measurement Point	Pin 38 of IC6045 (PCC)
Measuring Instrument	Oscilloscope (DC range)
Adjustment Page	0
Adjustment Address	00
Specified Value	$1\mu\text{A} \pm 0.1\text{V}$

##### Adjusting method

- Check the GND level of the waveforms.
- Page 1, address 00, data 00
- Change the data of page 01, address 00, and adjust the PCC settings (V) to the specified value.
- Press the F14.000 button of the adjusting remote command set.



Fig. 7-1-26

#### 5. Bright Adjustment (VF-67 board)

Adjust to the proper LUT1 panel white-balance level.  
If it is not correct, the image will be saturated (white) or black.

Mode	Reset
Signal	Pin signal
Measurement Point	Pin 38 of IC6045 (G.T)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	00 (000/001)
Specified Value	$1\mu\text{A} \pm 0.1\text{V}$

##### Adjusting method

- Page 1, address 00, data 00
- Change the data of page 01, address 00, and adjust the parallel difference (A) between the current waveform pattern and the new corrected waveform pattern to the specified value.
- Press the F14.000 button of the adjusting remote command set.



Fig. 7-1-28



## 6. Contrast Adjustment (VF-67 board)

Set the contrast of the image.

If the contrast is not correct, the image will be blur (whitish) or saturated.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CN902 (G OUT)
Measuring Instrument	Oscilloscope External trigger: Pin ③④ of IC902 (FRP)
Adjustment Page	D
Adjustment Address	B5 (CONTRAST)
Specified Value	$A=2.0 \pm 0.1V$

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B5, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote command.

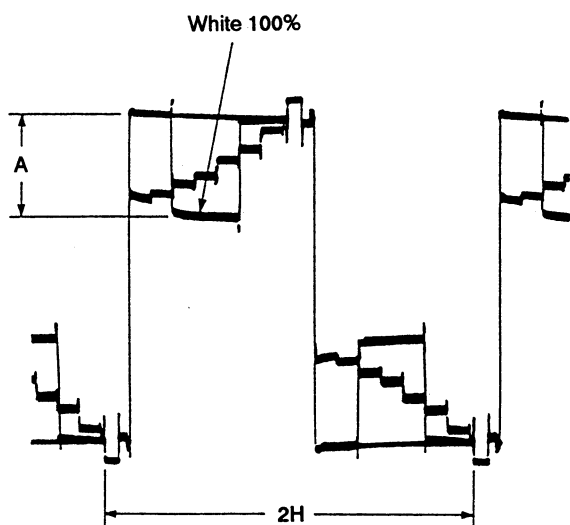


Fig. 7-1-30.

## 7. SUB BRIGHT R Preset Adjustment (1) (VF-67 board)

White balance rough adjustment (1)

Mode	Record
Signal	No signal
Measurement Point	Pin ⑦ of CN902 (R OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	B3 (SUB BRIGHT R)
Specified Value	$A=7.0 \pm 0.1V$

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B3 and adjust the potential difference (A) between the reversed waveform pedestal and the non reversed waveform pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote command.

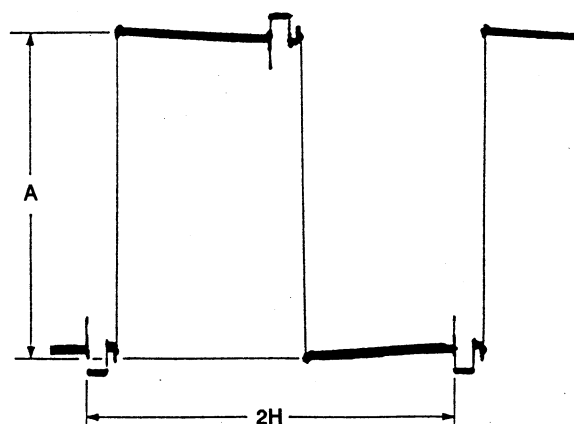


Fig. 7-1-31.

**6. Oscilloscope Adjustment (YP447 board)**

Service manual of the image.

If the contrast is not correct, the image will be clear (white) or saturated.

Mode	Remark
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ② of IC9001 (p. 43.7)
Measuring Instrument	Oscilloscope Reference signal Pin ② of IC9001 (p. 43.7)
Adjustment Page	10
Adjustment Address	00 (EEPROM)
Specified Value	ANLS = 0.1V

Adjusting method

- 1) Page 1, address 00, data 00
- 2) Change the data of page 10, address 00, and adjust the voltage (AN) between the white (YBP) and pedestal to the specified value.
- 3) From the VALUE section of the adjusting menu, proceed.



Fig. 7-4-86

**7. SUB SIGNAL Pin Power Adjustment (Y)**

(YP447 board)

White balance rough adjustment (Y)

Mode	Remark
Signal	Pin signal
Measurement Point	Pin ② of IC9001 (p. 43.7)
Measuring Instrument	Oscilloscope
Adjustment Page	10
Adjustment Address	00 (EEPROM)
Specified Value	AN70 = 0.1V

Adjusting method

- 1) Page 1, address 00, data 00
- 2) Change the data of page 10, address 00 and adjust the potential difference (AN) between the pedestal waveform (pin) and the sub-signal waveform (pin) to the specified value.
- 3) From the VALUE section of the adjusting menu, proceed.



Fig. 7-4-87

## 8. SUB BRIGHT B Preset Adjustment (2) (VF-67 board)

White balance rough adjustment (2)

Mode	Record
Signal	No signal
Measurement Point	Pin ⑧ of CN902 (B OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	B4 (SUB BRIGHT B)
Specified Value	$A=7.1 \pm 0.1V$

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: B4 and adjust the potential difference (A) between the reversed waveform pedestal and the non reversed waveform pedestal to the specified value.
- 3) Press the PAUSE button of the adjusting remote command-er.

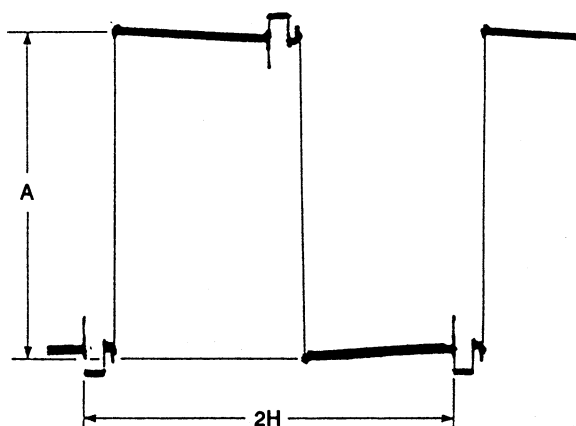


Fig. 7-1-32.

## 9. White Balance Adjustment

Adjust to the proper white balance level.

If it is not correct, the color reproducibility of the LCD panel will be poor.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B3 (SUB BRIGHT R), B4 (SUB BRIGHT B)
Specified Value	The display should not be colored

**Note:** Wait for more than 1 minute after the power supply has been turned on before this adjustment.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Check that the LCD display is not colored. If it is, change the data of address: B3 and address: B4 of page: D, and adjustment the display is not colored.
- 3) Press the PAUSE button of the adjusting remote command-er.

**5. SUB-PIGMENT B Preset Adjustment (R)**  
(SH-87 board)

White balance rough adjustment (R)

Mode	Reset
Signal	No signal
Measurement Point	Pix(R) of LAMP (R CLUT)
Measuring Instrument	ColorChecker
Adjustment Page	0
Adjustment Address	54 (SUB-PIGMENT R)
Specified Value	64.00 ± 0.10

Adjusting method

- 1) Page 1, address (R), data (R)
- 2) Change the data of page 0, address (54) and adjust the pinpoint difference (Δ) between the corrected waveform (pinpoint) and the non-corrected waveform (pinpoint) to the specified value.
- 3) Press the [F4/ON] button of the adjusting screen continuously.



Fig. 3-1-32

**6. White Balance Adjustment**

Adjust to the proper white balance level.

If it is not correct, the color reproducibility of the LCD panel will be poor.

Mode	Reset
Signal	Color bar signal whose chroma and tint signals are filtered off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	0
Adjustment Address	50 (SUB-BALANCE B), 56 (SUB-BALANCE R)
Specified Value	The display should not be referred

**Notes:** Wait for more than 3 minutes after the power supply has been turned on before this adjustment.

Adjusting method

- 1) Page 1, address (R), data (R)
- 2) Check that the LCD display is not colored. If it is, change the data of address (50) and address (56) of page 0, and adjustment the display is not colored.
- 3) Press the [F4/ON] button of the adjusting screen continuously.

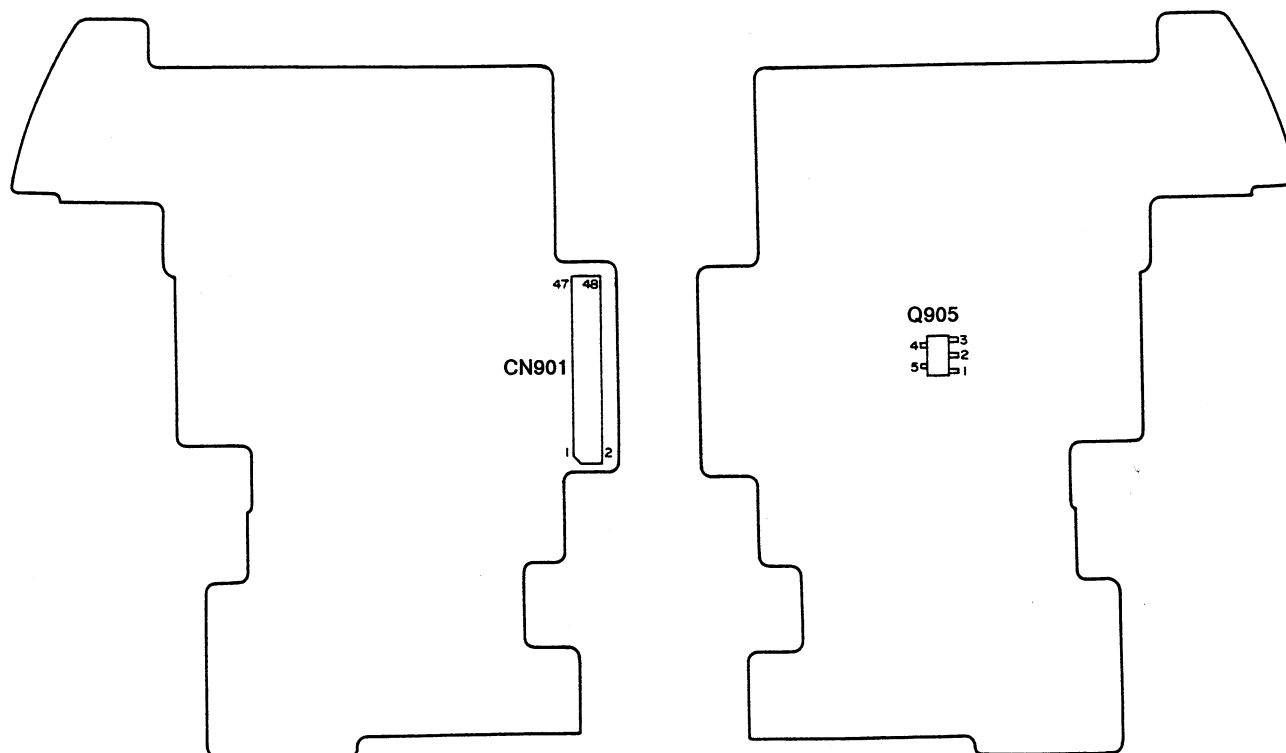




# 1-5. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

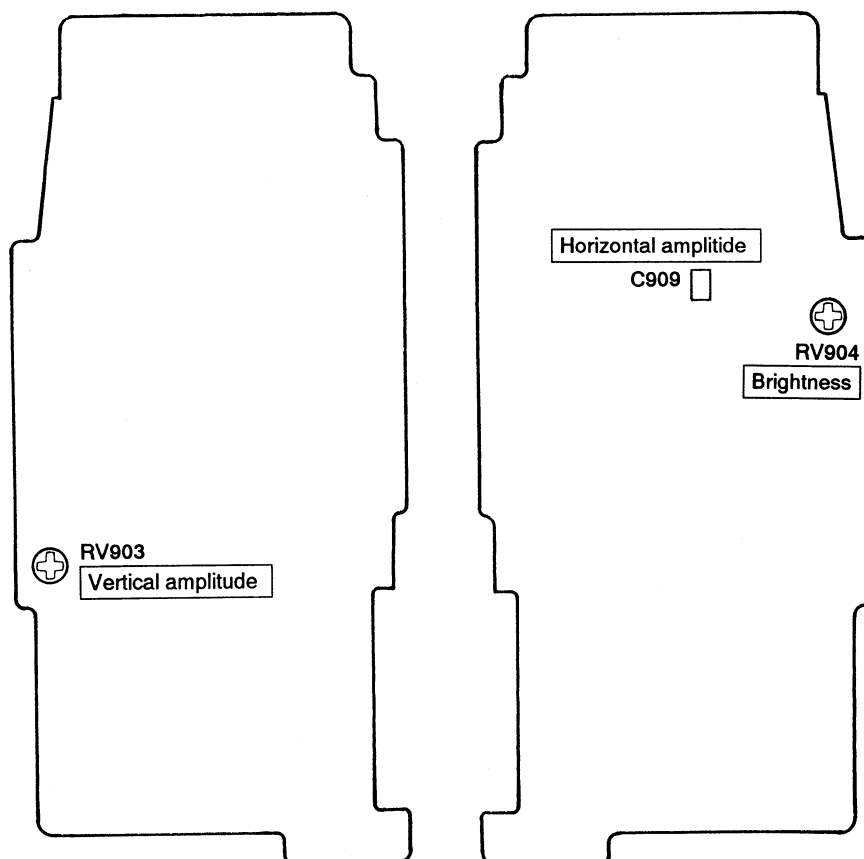
DD BOARD (CONDUCTOR SIDE)

DD BOARD (COMPONENT SIDE)



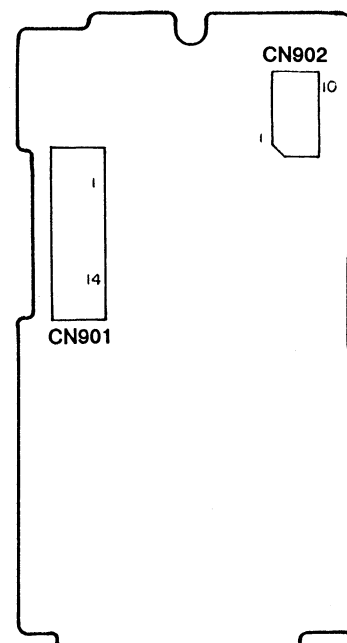
CCD-TR42/TR72/TR82/TR400/TR430/TR550/TR750

VF-65 BOARD (COMPONENT SIDE) VF-65 BOARD (CONDUCTOR SIDE)



CCD-TR70/TR80

VF-66 BOARD (COMPONENT SIDE)



# 1-6. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

EO BOARD (CONDUCTOR SIDE)



EO BOARD (COMPONENT SIDE)



000-TR40/TF4/TB4/TM40/TR40/TFM40/TFM40

VF-46 BOARD (COMPONENT SIDE) VF-46 BOARD (CONDUCTOR SIDE)



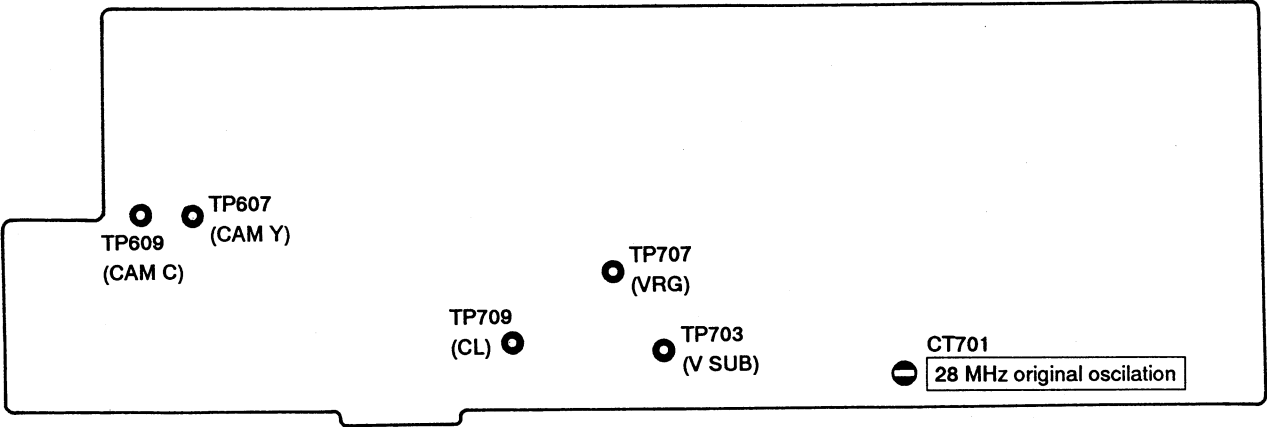
000-TR40/TF4

VF-46 BOARD (COMPONENT SIDE)

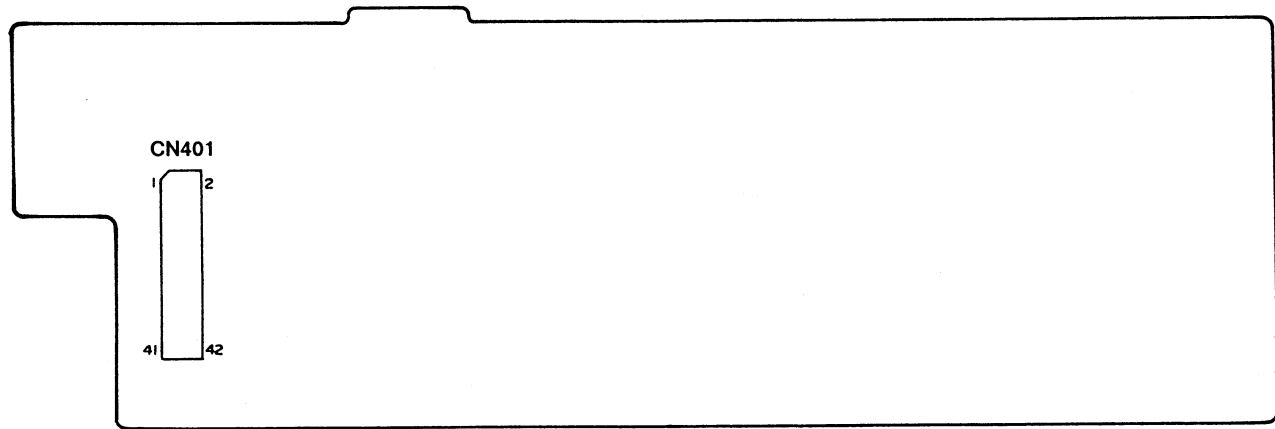




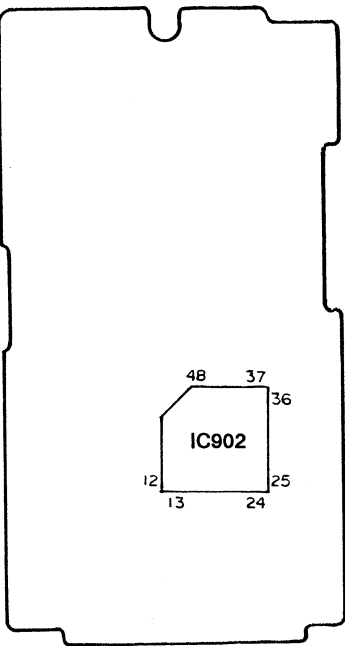
**VC BOARD (COMPONENT SIDE)**



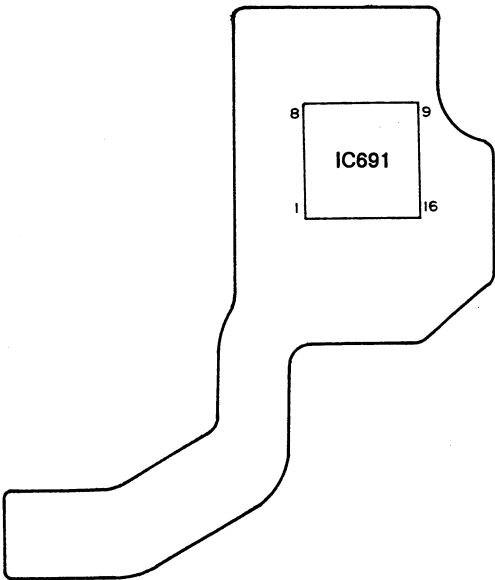
**VC BOARD (COMPONENT SIDE)**



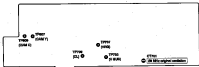
**VF-66 BOARD  
(CONDUCTOR SIDE)**



**FP-89 BOARD**



VC BOARD (COMPONENT SIDE)



VC BOARD (COMPONENT SIDE)



VP-88 BOARD  
(CONNECTOR SIDE)



VP-88 BOARD



## 7-2. MECHANICAL SECTION ADJUSTMENTS

### Mechanism Parts Adjustments

For details on the adjustments and checks of mechanical section and replacements of mechanism parts, refer to the separate volume-"8 mm Video Mechanism Adjustment Manual IV A Mechanism".

### 2-1. OPERATING WITHOUT A CASSETTE

- 1) Refer to "2. DISASSEMBLY" and supply the power with the cabinet removed. (So that the mechanical deck can be operated.)
- 2) Connect the adjusting remote commander to the remote terminal.
- 3) Turn on the HOLD switch of the adjusting remote commander.
- 4) Close the cassette compartment without loading a cassette and complete loading.
- 5) Set data: 01 to page: 1, address: 00.  
(Release of the protect)
- 6) Set data: 01 to page: D, address: 02, and press the PAUSE button of the adjusting remote commander.  
(Emergency prohibition mode setting)
- 7) Set data: 04 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.  
(Sensor ineffective mode setting)

By carrying out the above procedure, the unit can be operated without loading a cassette.

Be sure to carry out "Processing after Operations" after checking the operations.

Set the data of page: D, address: 03 to the following if the sensor ineffective mode, forced VTR power supply ON mode or forced camera power supply ON mode are to be used together.

Forced VTR power supply ON mode..... 06

Forced camera power supply ON mode ..... 05

#### [Processing after Operations]

- 1) Set data: 01 to page: 1, address: 00.  
(Release of protect)
- 2) Set data: 00 to page D, address: 02, and press the PAUSE button of the adjusting remote commander.  
(Release of the emergency prohibition mode)
- 3) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.  
(Release of the sensor ineffective mode)
- 4) Set data: 00 to page: 1, address: 00.  
(Protect setting)
- 5) Disconnect the power supply of the unit.

## 7-2. MECHANICAL SECTION ADJUSTMENTS

### Mechanism Parts Adjustments

For details on the adjustments and checks of mechanical section and replacement of mechanism parts, refer to the separate volume "E-100 Video Maintenance Adjustment Manual" of [a television].

### 7-1. OPERATING WITHOUT A CASSETTE

- 1) Refer to "E-1. DISASSEMBLY" and supply the power with the caution observed. (So that the mechanical shock can be avoided.)
- 2) Connect the adjusting screw connector to the screw terminal.
- 3) Turn on the "HOLD" switch of the adjusting screw connector.
- 4) Close the cassette compartment without loading a cassette and complete loading.
- 5) Set data 01 to page 1, address 01.  
(Release of the power)
- 6) Set data 01 to page 1, address 01, and press the PAUSE button of the adjusting screw connector.  
(Emergency prohibition mode setting)
- 7) Set data 01 to page 1, address 01, and press the PAUSE button of the adjusting screw connector.  
(Release prohibition mode setting)

By carrying out the above procedure, the unit can be operated without loading a cassette.

Be sure to carry out "Processing after Operations" after checking the operation.

Set the data of page 1, address 01 to the following if the error (inhibitor mode, forced VTR power supply ON mode or forced current power supply ON mode) are to be used together.

Forced VTR power supply ON mode ——— 01

Forced current power supply ON mode ——— 01

#### [Processing after Operations]

- 1) Set data 01 to page 1, address 01.  
(Release of power)
- 2) Set data 01 to page 1, address 01, and press the PAUSE button of the adjusting screw connector.  
(Release of the emergency prohibition mode)
- 3) Set data 01 to page 1, address 01, and press the PAUSE button of the adjusting screw connector.  
(Release of the error (inhibitor mode))
- 4) Set data 01 to page 1, address 01.  
(Release setting)
- 5) Disconnect the power supply of the unit.

## 2-2. TAPE PATH ADJUSTMENT

### 1. Preparations for adjustments

- 1) Clean the tape path face (tape guide, drum, capstan shaft, pinch roller).
- 2) Connect the adjusting remote commander to the remote terminal.
- 3) Turn on the HOLD switch of the adjusting remote commander.
- 4) Select page: 1, address: 00, and set data: 01.  
(Release of the protect)
- 5) Select page: D, address: 01, and set data: 03.  
(Set the track shift mode. The adjusting remote commander can be disconnected if its PAUSE button of remote commander is pressed. In this case, be sure to perform "Processing after operations" after completing adjustments.)
- 6) Connect the oscilloscope.  
Channel 1-Pin ③ of CN102 of VS board  
External trigger-Pin ④ of CN102 of VS board  
(Connect the oscilloscope via the measuring pin tool for the video section (J-6082-140-A).)
- 7) Playback the alignment tape (WR5-1NP) for tracking.
- 8) Check that the RF waveform of the oscilloscope is flat at both the entrance and the exit.  
If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment Manual IV (A Mechanism).
- 9) Perform "Processing after operations", after completing adjustments.

CN102 of VS board

1	PB 'CH RF
2	PB PCM RF
3	PB RF
4	RF SWP
5	RP GND
6	REC 2

### [Processing after operations]

- 1) Connect the adjusting remote commander, and turn on the HOLD switch.
- 2) Select page: 1, address: 00, and set data: 01.
- 3) Select page: D, address: 02, and set data: 00.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Remove the power supply from the unit.

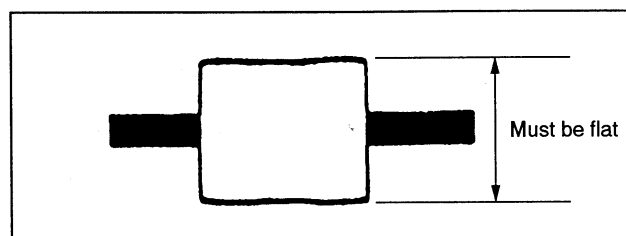


Fig. 7-2-1.

## 2-2. TAPE PATH ADJUSTMENT

### 1. Preparations for adjustments

- 1) Check the tape path from tape guide, drum, capstan shaft, pinch roller.
- 2) Connect the adjusting screws counter-clockwise to the return position.
- 3) Turn on the VHS/Hi8 switch of the adjusting screws counter-clockwise.
- 4) Select page 1, address 00, and set data 00.  
(position of the pointer)
- 5) Select page 2, address 00, and set data 00.  
(for the back shift mode. The adjusting screws counter-clockwise can be disconnected if in PAL/NTSC format of records continuously is printed. In this case, be sure to perform "Processing after operation" after completing adjustments.)
- 6) Operate the multitracks.  
Channel 1 (Pa.2) of CH00 of VHS format  
Channel 4 (Pa.5) of CH00 of VHS format  
(Connect the multitracks via the connecting pin head for the video section (J-VIDEO (40-1)).)
- 7) Playback the alignment tape (VHS-BPF) for tracking.
- 8) Check that the RF waveforms of the multitracks in the RF both the customer and the unit.  
If not the, perform necessary adjustments according to the requests from Video Mechanical Adjustment Manual (9) (4, Introduction).
- 9) Perform "Processing after operation", after completing adjustments.

### CH00 of VHS format

1	PA 1CH RF
2	VB FCB/RF
3	VB RF
4	RF SWP
5	RF CND
6	MX 0

### Processing after operation)

- 1) Connect the adjusting screws counter-clockwise, and turn on the VHS/Hi8 switch.
- 2) Select page 1, address 00, and set data 00.
- 3) Select page 2, address 00, and set data 00.
- 4) Press the PAL/NTSC button of the adjusting screws counter-clockwise.
- 5) Remove the power supply from the unit.



Fig. 7-2-1.

## 7-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 7–92.

### 3-1. PREPARATIONS BEFORE ADJUSTMENT

The following adjusting instruments are used for adjusting the video section.

#### 3-1-1. Equipments to be Used

- 1) TV monitor
- 2) Oscilloscope: 2 phenomena, band 30 MHz or wider, with delay mode. (Use a 10:1 probe unless specified otherwise.)
- 3) Frequency counter
- 4) Pattern generator with video output terminal
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion meter
- 9) Audio attenuator
- 10) Regulated power supply
- 11) Alignment tape
  - For tracking adjustment (WR5-1NP)  
Part Code: 8-967-995-02
  - For Hi8 mode video frequency characteristics adjustment (WR5-7NE)  
Part Code: 8-967-995-13
  - For checking normal mode operations  
For SP (WR5-5NSP)  
Part Code: 8-967-995-42  
Or (WR5-4NSP)  
Part Code: 8-967-995-41  
For LP (WR5-4NL)  
Part Code: 8-967-995-51  
For checking AFM stereo operations (WR5-9NS)  
Part Code: 8-967-995-23
  - For checking Hi8 mode operations (ME tape)  
For SP (WR5-8NSE)  
Part Code: 8-967-995-43  
For LP (WR5-8NLE)  
Part Code: 8-967-995-52
- 12) remote commander for adjustment (J-6082-053-A)
- 13) VC board extension cord (42P, 0.8 mm)  
Part Code: J-6082-285-A
- 14) Control switch block (FK board)  
extension cord (9P, 0.8 mm)  
Part Code: J-6082-288-A
- 15) Control switch block (CK board)  
extension cord (18P, 0.8 mm)  
Part Code: J-6082-289-A
- 16) AU-165 board extension cord (34P, 0.8 mm)  
(CCD-TR72/TR80/TR400/TR430/TR750)  
Part Code: J-6082-286-A

#### 3-1-2. Adjusting Precautions

- 1) The adjustment for this unit is performed using the VIDEO input (VIDEO terminal input), or the camera input. The camera input can be used for video adjustments only. Use the VIDEO input for the other adjustments.

When using the VIDEO input, set the power supply switch to "PLAYER" or set the "forcible VTR power supply ON mode" using the adjusting remote commander. (Note 1).

When using the camera input, set the power supply switch to "CAMERA" or set the "Forcible camera+VTR power supply ON mode" using the adjusting remote commander (Note 2).

After completing adjustments, be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" (Note 3).

- 2) The F panel block (MA board) is not used for video adjustments. Disconnect the following connectors in these adjustments.
  1. CN1301 of the AU board
- 3) The view finder (VF board) is not used for video adjustments. Disconnect the following connector in these adjustments.
  1. CN206 of the VS board (4P, 0.5 mm)
- 4) The cabinet (R) (CK board: Power supply switch, camera function switch) need not be connected if the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" is set. In this case, disconnect the following connectors.
  1. CN503 of the VS board (18P, 0.8 mm)
  2. CN101 of the ZB board (4P, 0.8 mm)
  3. CN501 of the VS board (24P, 0.8 mm)  
(CCD-TR400/TR750)

However, as disconnecting these connectors means disconnecting the 3V lithium power supply, data set by the user such as the date, time, and menu will be lost. After completing the adjustments, set these data again, and be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode". (Note 3)  
When connecting the cabinet (R) using the extension cord, use the following type.

1. J-6080-289-A (18P, 0.8 mm)

## 7-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 7-86.

### 7-3-1. PREPARATIONS BEFORE ADJUSTMENT

The following adjusting instruments are used for adjusting the video section.

#### 7-3-1-1. Instruments to be Used

- 1) TV receiver
- 2) Oscilloscope: 2 channels, band (B) 40Hz or wider, with delay mode. (Use a 15A probe unless specified otherwise.)
- 3) Frequency counter
- 4) Pattern generator with video output included
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio-frequency meter
- 9) Audio oscilloscope
- 10) Regulated power supply
- 11) Alignment tape
  - For checking adjustment (VIDEO)P1  
Part Code: 8-997-999-02
  - For VCR mode video frequency characteristic alignment (VHS-V)  
Part Code: 8-997-999-03
  - For checking period (audio operation) (VHS-V)  
Part Code: 8-997-999-02
  - Or (VHS-V)SP:  
Part Code: 8-997-999-04
  - For LP (VHS-V)  
Part Code: 8-997-999-01
  - For checking VTR slow operation (VHS-V)  
Part Code: 8-997-999-02
  - For checking BIF mode operation (S-Vtype)  
Part Code: 8-997-999-02
  - For LP (VHS-V)  
Part Code: 8-997-999-01
- 12) remote commander for adjustment (VCR-V)  
Part Code: 8-999-999-01
- 13) VCR-timed electronic card (VTR, 0.5 sec)  
Part Code: 1-4003-389-01
- 14) Control voltage block (VTR board)  
electronic card (VTR, 0.5 sec)  
Part Code: 1-4003-389-01
- 15) Control voltage block (VCR board)  
electronic card (VCR, 0.5 sec)  
Part Code: 1-4003-389-01
- 16) A4-100V-timed electronic card (VTR, 0.5 sec)  
(CCH-1912/1913/1914/1915/1916/1917)  
Part Code: 1-4003-389-01

#### 7-3-1-2. Adjusting Precautions

- 1) The adjustment for this unit is performed using the VIDEO input (VIDEO terminal input), or the camera input. The camera input can be used for video adjustments only. Use the VIDEO input for the other adjustments.

When using the VIDEO input, set the power supply switch to "CAMERA" or set the "Variable VTR power supply (VTR mode)" using the adjusting remote commander (Note 1).

When using the camera input, set the power supply switch to "CAMERA" or set the "Variable camera-VTR power supply (VTR mode)" using the adjusting remote commander (Note 2).

After completing adjustments, be sure to set the "Variable VTR power supply (VTR mode)" or "Variable camera-VTR power supply (VTR mode)" (Note 3).

- 2) The F-past block (0.5 sec) is not used for video adjustments. (Discontinue the following operations in these adjustments.)
  1. CHECK of the A4 board
- 3) The video filter (VTR board) is not used for video adjustments. (Discontinue the following operation in these adjustments.)
  1. CHECK of the VTR board (VTR, 0.5 sec)
- 4) The cabinet (B) (CZ board) power supply switch, camera function switch) need not be connected if the "Variable VTR power supply (VTR mode)" or "Variable camera-VTR power supply (VTR mode)" is set. In this case, discontinue the following operations.
  1. CHECK of the VTR board (VTR, 0.5 sec)
  2. CHECK of the CZ board (VTR, 0.5 sec)
  3. CHECK of the VTR board (VTR, 0.5 sec)  
CCH-1914/1915/1916

However, on disconnecting these connection, never disconnect the 2V battery power supply, set as by the user such as the film, then, wait about 10 sec, after completing the adjustments, set these film again, and be sure to set the "Variable VTR power supply (VTR mode)" or "Variable camera-VTR power supply (VTR mode)" (Note 3).

When connecting the cabinet (B) using the operation card, set the following type.

1. 1-4003-389-01 (VTR, 0.5 sec)



- 5) The lens block and VC board are not used for video adjustments. Disconnect the following connectors in these adjustments.

1. CN203 of the VS board (42P, 0.8 mm)
2. CN775 of the VC board (8P, 0.8 mm)  
(CCD-TR82/TR400/TR550/TR750)

Connect the following when removing the VC board.

1. Connect Pin ② (REG H) and Pin ⑦ (D3.6V) of CN203 of the VS board with a jumper wire.

When connecting the VC board using the extension cord, use the following type.

1. J-6080-285-A (42P, 0.8 mm)

- 6) The audio board (AU board) is required only for audio adjustments. When not using it, disconnect the following connector.

1. CN202 of the VS board

When connecting the AU-165 board (CCD-TR72/TR80/TR400/TR430/TR750) using the extension cord, use the following type.

1. J-6080-286-A (34P, 0.8 mm)

- 7) When opening the VS board, disconnect the following connectors.

1. CN502 of the VS board (9P, 0.8 mm)

The VTR function keys will not work. Use the remote commander to perform operations other than EJECT.

When connecting the FK board and CN502 of VS board using the extension cord, use the following type.

1. J-6080-288-A (9P, 0.8 mm)

**Note 1:** Setting the “forcible VTR power supply ON mode (VIDEO input mode)”

- 1) Set data: 01 to page: 1, address: 00.  
(Releasing the page D protect)
- 2) Set data: 02 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.  
(Setting the forcible VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the “forcible power supply ON mode”.

**Note 2:** Setting the “forcible camera+VTR power supply ON mode (camera input mode)”

- 1) Set data: 01 to page: 1, address: 00.  
(Releasing the page D protect)
- 2) Set data: 03 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.  
(Setting the forcible camera+VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the “forcible power supply ON mode”.

**Note 3:** Exiting the “forcible power supply ON mode”

- 1) Set data: 01 to page: 1, address: 00.  
(Releasing the page D protect)
- 2) Set data: 00 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.  
(Setting the forcible power supply ON mode)
- 3) Set data: 00 to page: 1, address: 00.  
(Setting the page D protect)

### 3-1-3. Connecting the Equipments

Connect the measuring instruments as shown in Fig. 7-3-1. according to the input terminal specifications (VIDEO input or CAMERA input), and perform the adjustments.

The input terminal is specified in the ( ) in the signal column. Either input terminal can be used when there are no specifications.

**Note 1:** If the VIDEO input is used for the adjustments which specify for the CAMERA input to be used, the product specifications of the unit may not be satisfied in some cases. Be sure to perform according to the specifications.

**Note 2:** When adjustments are performed with the S video output terminal VTR as the signal source, the efficiencies of the unit may be affected by VTR. It is recommended that a pattern generator with a Y/C separation output terminal be used as much as possible.

- 6) The laser beam and VC board are not used for video adjustments. Disconnect the following connections in these adjustments:

1. COG01 of the VE board (2P, 0.8 mm)
2. IN070 of the VC board (2P, 0.8 mm)  
COG1-TR04/TR05/TR06/TR07

Connect the following when connecting the VC board.

1. Connect Pin ② (000 03) and Pin ③ (000 05) of COG01 of the VE board with a jumper wire.

When connecting the VC board using the connection cord, use the following type.

1. J-6000-000-A (2P, 0.8 mm)

- 8) The audio board (A01 board) is required only for audio adjustments. When not using it, disconnect the following connection:

1. COG01 of the VE board

When connecting the A01-00 board (COG1-TR10/TR11/TR12/TR13/TR14/TR15) using the extension cord, use the following type.

1. J-6000-000-A (2P, 0.8 mm)

- 9) When opening the VE board, disconnect the following connection:

1. COG01 of the VE board (2P, 0.8 mm)

The VTR function keys will not work. Use the remote commander to perform operations other than EJECT.

When connecting the VE board and COG01 of VE board using the extension cord, use the following type.

1. J-6000-000-A (2P, 0.8 mm)

**Note 1:** Setting the "Variable VTR power supply ON mode" ("VIDEO input mode")

- 1) Set item 01 in page 1, address 02.

(Following the page 01 screen.)

- 2) Set item 00 in page 0, address 00 and press the **PAUSE** button of the adjusting remote commander.

(Setting the Variable VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (2) removed. After completing adjustments, be sure to set the "Variable power supply ON mode".

**Note 2:** Setting the "Variable camera VTR power supply ON mode" ("camera input mode")

- 1) Set item 01 in page 1, address 00.

(Following the page 01 screen.)

- 2) Set item 00 in page 0, address 00 and press the **PAUSE** button of the adjusting remote commander.

(Setting the Variable camera VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (2) removed. After completing adjustments, be sure to set the "Variable power supply ON mode".

**Note 3:** Setting the "Variable power supply ON mode"

- 1) Set item 01 in page 1, address 00.

(Following the page 01 screen.)

- 2) Set item 00 in page 0, address 00 and press the **PAUSE** button of the adjusting remote commander.

(Setting the Variable power supply ON mode)

- 3) Set item 00 in page 0, address 00.

(Following the page 01 screen.)

#### 5-4-5. Disconnecting the Equipment

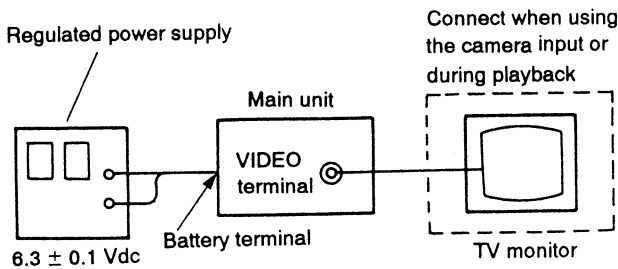
Connect the connecting instruments as shown in Fig. 5-54, according to the input terminal specifications (VIDEO input or CAMERA input), and perform the adjustments.

The input terminal is specified in the [ ] in the signal column. Other input terminal can be used when there are no specifications.

**Note 1:** If the VIDEO input is used for the adjustments which specify for the CAMERA input to be used, the proper specifications of the unit may not be satisfied in some cases. Be sure to perform according to the specifications.

**Note 2:** When adjustments are performed with the ② video output terminal VTR as the signal source, the offset/center of the unit may be affected by VTR. It is recommended that a pattern generator with a VC separator output terminal be used as much as possible.

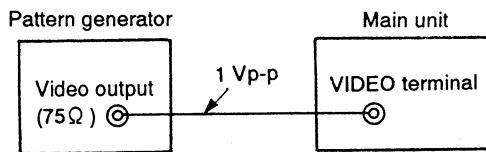
### Connecting the TV monitor and regulated power supply



### Connecting the pattern generator

#### [VIDEO Input]

Set the power supply switch to "PLAYER" or set the "forcible VTR power supply ON mode" using the adjusting remote commander.

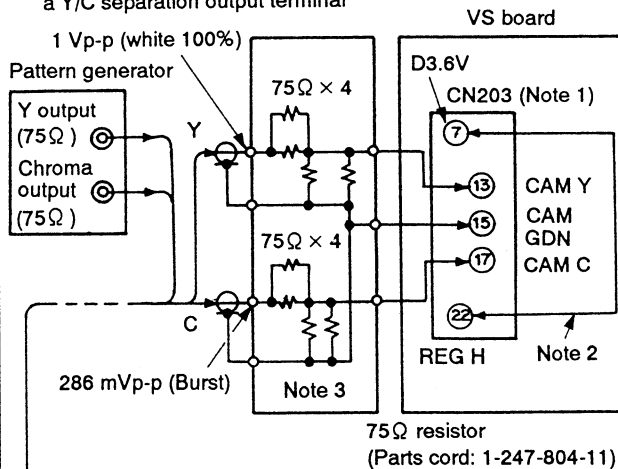


**Note:** The TV monitor cannot be connected. Use the view finder to monitor.

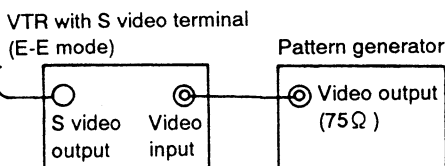
#### [CAMERA Input]

Set the power supply switch to "CAMERA" or set the "forcible camera+VTR power supply ON mode" using the adjusting remote commander.

- When the pattern generator has a Y/C separation output terminal



- When the pattern generator has no Y/C separation output terminal



**Note 1:** Remove the VC board.

**Note 2:** Connect Pins ⑦ and ② of CN203 with the jumper wire.

**Note 3:** The chroma signal input is not required for some adjustments.

### 3-1-4. How to Set the REC Mode in the Model with out REC switch

- REC key forbidden accept mode cancel
  1. Connect the adjusting remote commander to the remote terminal.
  2. Turn on the power.
  3. Turn on the HOLD switch of the adjusting remote commander.
  4. Select the page: 1 address: 00, and set the data to 01. (Protect mode cancel)
  5. Select the page: D address: 17, and set the data to 12 [13].<sup>Note 1</sup> (REC key forbidden accept mode cancel)
  6. Press PAUSE button on the adjusting remote commander. (Write to the non-volatile memory)

The REC key is accepted through the above procedure.

- REC mode setting
  1. Turn off the HOLD switch of the adjusting remote commander.
  2. Press REC buttons of the adjusting remote commander.
  3. Perform "3. Procedure after completed the adjustment", after completing adjustment.
- Procedure after completed the adjustment
 

Be sure to return the mode to REC key forbidden accept mode after adjustment.

  1. Connect the adjusting remoter controller.
  2. Turn on the power.
  3. Turn on HOLD switch of the adjusting remote commander.
  4. Select the page: 1 address: 00, and set the data to 01. (Protect mode cancel)
  5. Select the page: D address: 17, and set the data to 02 [03].<sup>Note 1</sup> (Setting of the REC key forbidden accept mode)
  6. Press PAUSE button on the adjusting remote commander. (Write to the non-volatile memory)
  7. Turn off the power.

**Note 1:** No mark : CCD-TR42/TR70/TR72/TR80/TR82  
[ ] : CCD-TR430/TR550

Fig. 7-3-1.

[illegible][illegible]

100

Mail the payment supply order to "FLUENT" at the New Boston-VIA  
address above. We'll send you the collection number immediately.



**Notes:** The 70 number should be converted into the corresponding number.

1000

For the power supply, make a "GND/GND" on the "Positive terminal of the power supply (2) make" using the wire with correct connection.

- **What's the deal with the "new" *Star Trek*?** The new *Trek* is a TV show that's been around since 1966, and it's still going strong. It's a sci-fi series that's been a cultural phenomenon for decades. The show has a large following, and it's one of the most popular TV shows in the world. The new *Trek* is a reboot of the original series, and it's a great example of how a classic TV show can be updated for a new generation. The new *Trek* is a great example of how a classic TV show can be updated for a new generation.



- **Effect of the position of the patient:** The patient should be in a supine position with the head of the bed flat.



1. **Identify the main idea of the passage.**  
 2. **Identify the supporting details.**  
 3. **Identify the author's purpose.**  
 4. **Identify the author's tone.**  
 5. **Identify the author's bias.**  
 6. **Identify the author's point of view.**  
 7. **Identify the author's audience.**  
 8. **Identify the author's style.**  
 9. **Identify the author's structure.**  
 10. **Identify the author's language.**

**Ques 1:** The demand curve for a good is not required for consumer surplus.

2-1-4. Please to list the **2000** changes to the related court-cost **2000** statute.

1. Connect the adjusting remote transmitter to the remote receiver.
  2. Turn on the power.
  3. Press on the (RCL) switch of the adjusting remote transmitter.
  4. Release the page 1 address (1), and set the data to 01. (Program mode reset)
  5. Release the page 2 address (2), and set the data to 12 (12).
- (RCL key forbidden except mode reset)
6. Press PALINE button on the adjusting remote transmitter or (WRITE) on the remote receiver

**The 2002-2003 season**

- C) HEC mode setting**
  1. Turn off the HECL switch of the adjoining master command-in.
  2. Press HEC buttons of the adjoining master command-in.
  3. Pushes "5. Procedures after completed the adjustment" after completing adjustment.
- D) Procedures after completed the adjustment**

Be sure to return the mode to HEC key inhibition except mode after adjustment.

  1. Connect the adjoining master controller.
  2. Turn on the power.
  3. Turn on HECL switch of the adjoining master command-in.
  4. Select the page 1 address: 00, and set the data to 01. (Power mode reset)
  5. Select the page 02 address: 10, and set the data to 00 (00).  
(Setting of the HEC key inhibition except mode)
  6. Press HOLD button on the adjoining master command-in. (Write to the non-volatile memory)
  7. Turn off the power.

[illegible]

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

1999

### 3-1-5. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the adjustment signal for adjusting the VTR section, the video output signal must satisfy the given specifications.

#### 1. CAMERA input

Connect the oscilloscope to Pin ⑬ of CN203 on VS board, and check that the sync signal of the Y signal is approximately 0.143 Vp-p and that the amplitude of the video section is approximately 0.357 Vp-p. (When a VTR with the S VIDEO output terminal is used, also check that the chroma signal and burst signal have not remained.) Connect the oscilloscope to Pin ⑰ of CN203 on VS board, and check that the burst signal amplitude of the chroma signal is approximately 0.143 Vp-p and flat, and that the amplitude ratio of the burst signal to the chroma signal is 0.30:0.66. The Y and chroma signals used in the adjustment are shown in Fig. 7-3-2.

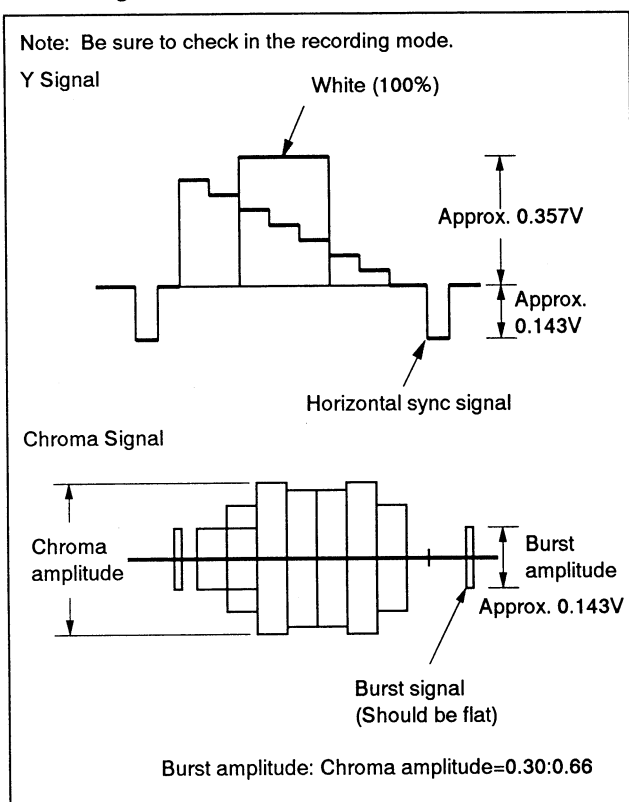


Fig. 7-3-2. Color bar signal of pattern generator

#### 2. VIDEO input

Connect the oscilloscope to the video input/output terminal, and check that the sync signal amplitude of the video signal is approximately 0.286V, the amplitude of the video section is approximately 0.714V, the amplitude of the burst signal is approximately 0.286V and flat, and that the level ratio of the burst signal to the "red" signal is 0.30:0.66.

The video signal (color bar) used for adjusting the VTR section is shown in Fig. 7-3-3.

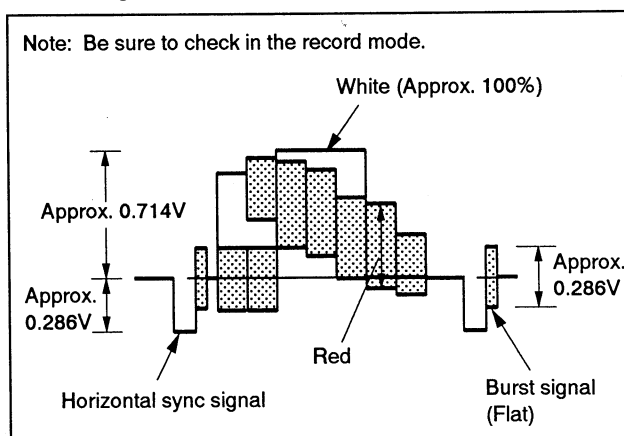


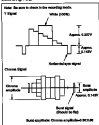
Fig. 7-3-3. Color Bar Signal of Pattern Generator

### 3.1.3. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the reference signal for adjusting the VTR section, the video output signal must satisfy the given specifications.

#### 1. CHROMA Input

Connect the oscilloscope to Fig. 3-2 of CHROMA on V5 board, and check that the sync signal of the Y signal is approximately 0.243 Vp-p and that the amplitude of the video section is approximately 0.207 Vp-p. (When a VTR with the S-VHS® output terminal is used, also check that the chroma signal and burst signal have not reversed.) Connect the oscilloscope to Fig. 3 of CHROMA on V5 board, and check that the burst signal amplitude of the chroma signal is approximately 0.143 Vp-p and that, and that the amplitude ratio of the burst signal to the chroma signal is 0.363:0.6. The Y and chroma signals used in the adjustment are shown in Fig. 3-2-1.

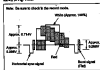


(Fig. 3-2-1. Color bar signal of pattern generator)

#### 2. VIDEO Input

Connect the oscilloscope to the video input/output terminal, and check that the sync signal amplitude of the video signal is approximately 0.289V, the amplitude of the video section is approximately 0.714V, the amplitude of the burst signal is approximately 0.207V and that, and that the level ratio of the burst signal to the "red" signal is 0.363:0.6.

The video signal (color bar) used for adjusting the VTR section is shown in Fig. 3-2-2.



(Fig. 3-2-2. Color bar signal of Pattern Generator)

### 3-1-6. Alignment Tape

The following table lists alignment tapes which are available.  
Use the tape specified in the signal column for each adjustment.

If the type of tape to be used for checking operations is not specified, use whichever type.

Name	Record-ing mode	Tape type	Tape speed	Recording contents		Usage
				Video area	PCM area	
Tracking WR5-1NP	L	MP	SP	CH2: Signal for 1 MHz tape path adjustment		Tape path adjustment Switching position adjustment
Video frequency characteristics WR5-7NE	E	ME	SP	RF sweep 0 to 15 MHz Marker 2, 4.5, 7, 8.5, 10 MHz		Frequency characteristics adjustment
Video frequency characteristics WR5-2N	L	MP	SP	RF sweep Marker 1, 3.58, 5.5, 7 MHz		
Operation check (SP mode) WR5-5NSP	L	MP	SP	<ul style="list-style-type: none"> <li>Video signal Color bar 4 minutes Monoscope 4 minutes</li> <li>Audio signal (AFM) 400 Hz 60% modulation</li> </ul>	<ul style="list-style-type: none"> <li>Audio signal (PCM) Monoscope section 20 Hz 20 sec. } Repeated 4 times 400 Hz 20 sec. 14 kHz 20 sec. Color bar section 1 kHz 4 minutes</li> </ul>	Checking operations
Operation check WR5-8NSE	E	ME	SP		<ul style="list-style-type: none"> <li>Audio signal (PCM) 400 Hz</li> </ul>	
Operation check WR5-4NL	L	MP	LP	<ul style="list-style-type: none"> <li>Video signal Color bar 4 minutes Monoscope 4 minutes</li> <li>Audio signal (AFM) 400 Hz 60% modulation</li> </ul>		
Operation check WR5-8NLE	E	ME	LP		<ul style="list-style-type: none"> <li>Audio signal (PCM) 400 Hz</li> </ul>	
AFM stereo Operation check WR5-9NS	L	MP	SP	<ul style="list-style-type: none"> <li>Video signal Color bar 4 minutes Monoscope 4 minutes</li> <li>Audio signal (AFM) Stereo section (color bar) Lch: 400 Hz, Rch: 1 kHz  <math display="block">\left( \begin{array}{l} L+R: \\ 1.5 \text{ MHz} \pm 60 \text{ kHz DEV} \\ L-R: \\ 1.7 \text{ MHz} \pm 30 \text{ kHz DEV} \end{array} \right)</math> Bilingual section (Monoscope) MAIN: 400 Hz (1.5 MHz <math>\pm</math> 60 kHz DEV) SUB: 1 kHz (1.7 MHz <math>\pm</math> 30 kHz DEV)</li> </ul>	<ul style="list-style-type: none"> <li>Audio signal (PCM) 400 Hz 8 minutes</li> </ul>	AFM stereo Checking operations

**Note:** Recording mode

L ..... Normal (Original) mode  
E ..... hi8 (hi band) mode

Tape type

MP ..... Particle type metal tape  
ME ..... Evaporated type metal type

Table 7-3-1.

### 3-3-4. Alignment Type

The following table lists alignment types which are available.  
Use the type specified in the signal content for each adjustment.

If the type of type to be used for checking operations is not specified, the reference type.

Name	Recording type mode	Type type	Type speed	Recording contents		Usage
				Video area	PCM area	
Tacking WB3-270	L	MP	SP	CDS signal for 1 MHz type/pulse adjustment		Type pulse adjustment (including position adjustment)
Video frequency characteristic WB3-270	B	MP	SP	SP using 0 to 12 MHz Modulator 2, 4.5, 7, 8.5, 10 MHz		Frequency characteristic adjustment
Video frequency characteristic WB3-270	L	MP	SP	SP using Modulator 1, 3.5, 5.5, 7 MHz		
Operation check (SP mode) WB3-270P	L	MP	SP	<ul style="list-style-type: none"> <li>Video signal Color bar 4 minutes Monoscope 4 minutes</li> <li>Audio signal (APM) 400 Hz/50% modulation</li> </ul>	<ul style="list-style-type: none"> <li>Audio signal (PCM) Monoscope monitor 20 Hz ~ 10 kHz 400 Hz (10 Hz) } segment 10 kHz (10 Hz) } 4 lines Color bar monitor 1 kHz ~ 4 minutes</li> </ul>	Checking operations
Operation check WB3-270B	B	MP	SP		<ul style="list-style-type: none"> <li>Audio signal (PCM) 400 Hz</li> </ul>	
Operation check WB3-270L	L	MP	LP	<ul style="list-style-type: none"> <li>Video signal Color bar 4 minutes Monoscope 4 minutes</li> <li>Audio signal (APM) 400 Hz/50% modulation</li> </ul>	<ul style="list-style-type: none"> <li>Audio signal (PCM) 400 Hz</li> </ul>	
Operation check WB3-270LB	B	MP	LP	<ul style="list-style-type: none"> <li>Video signal Color bar 4 minutes Monoscope 4 minutes</li> <li>Audio signal (APM) 400 Hz/50% modulation</li> </ul>	<ul style="list-style-type: none"> <li>Audio signal (PCM) 400 Hz</li> </ul>	
APM wave Operation check WB3-270	L	SP	SP	<ul style="list-style-type: none"> <li>Video signal Color bar 4 minutes Monoscope 4 minutes</li> <li>Audio signal (APM) Binaural (stereo) Left 400 Hz, Right 1 kHz 1 kHz 1.5 kHz ~ 40 kHz (SP) 1 kHz 1.5 kHz ~ 40 kHz (SP) Binaural monitor (Monoscope) 400 Hz ~ 40 kHz (1.5 kHz ~ 40 kHz (SP) 1 kHz ~ 1 kHz (1.5 kHz ~ 40 kHz (SP)</li> </ul>	<ul style="list-style-type: none"> <li>Audio signal (PCM) 400 Hz 4 minutes</li> </ul>	APM wave Checking operations

Name: Recording mode

- L ----- Normal (Original) mode  
B ----- 400 Hz band mode

Type type

- MP ----- Flexible type normal type  
MPB ----- Improved type normal type

Table 3-3-4.



Fig. 7-3-4. shows the 75% color bar signals recorded on the alignment tape.

**Note:** Measure using the video output terminal (Terminated at 75  $\Omega$  )

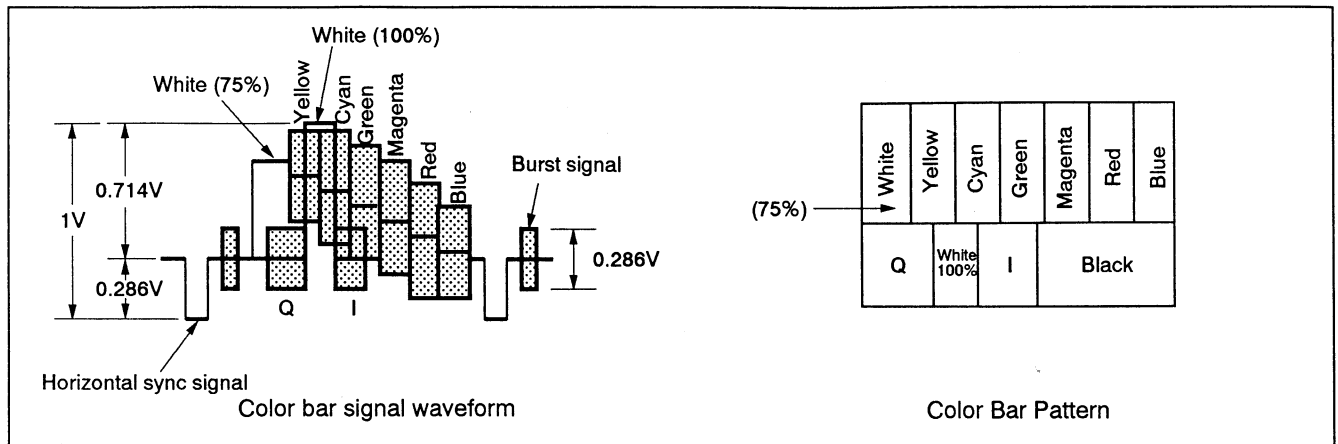


Fig. 7-3-4. Color Bar Signals of the Alignment Tape

### 3-1-7. Input/Output Level and Impedance

#### 1. CCD-TR42/TR70/TR72/TR80/TR82/TR430/TR550

Video output Phono jack, 1 Vp-p, 75  $\Omega$  ,  
unbalanced, sync negative

Audio output Phono jack, -7.5 dBs,  
(at load impedance 47 k $\Omega$  )  
impedance less than 2.2 k $\Omega$

#### 2. CCD-TR400/TR750

S video input/output 4-pin mini DIN,  
Luminance signal:  
1 Vp-p, 75 ohms,  
unbalanced, sync negative

Chrominance signal:  
0.286 Vp-p, 75 ohms, unbalanced

Video input/output Phono jack, 1 Vp-p, 75 ohms, unbalanced,  
sync negative

Audio input/output Phono jack,  
Input: -7.5 dBs, input impedance more  
than 47 kilohms  
Output: -7.5 dBs, (at load impedance  
47 kilohms), impedance less than  
2.2 kilohms



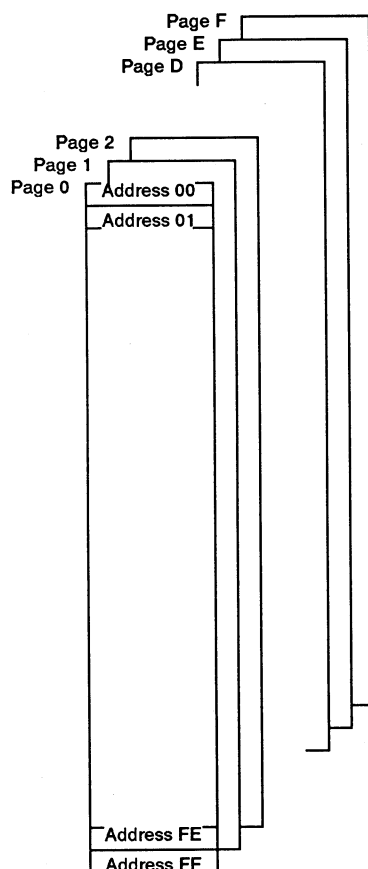
### 3-1-8. Service Mode

#### 1. Setting the service mode

The service mode consists of the adjustment mode which adjusts the EVR and the test mode which shows the condition of the unit.

The unit can be set into the test mode and adjustment mode by connecting the adjusting remote commander (Set the HOLD switch to "HOLD").

#### (1) Service LANC memory map

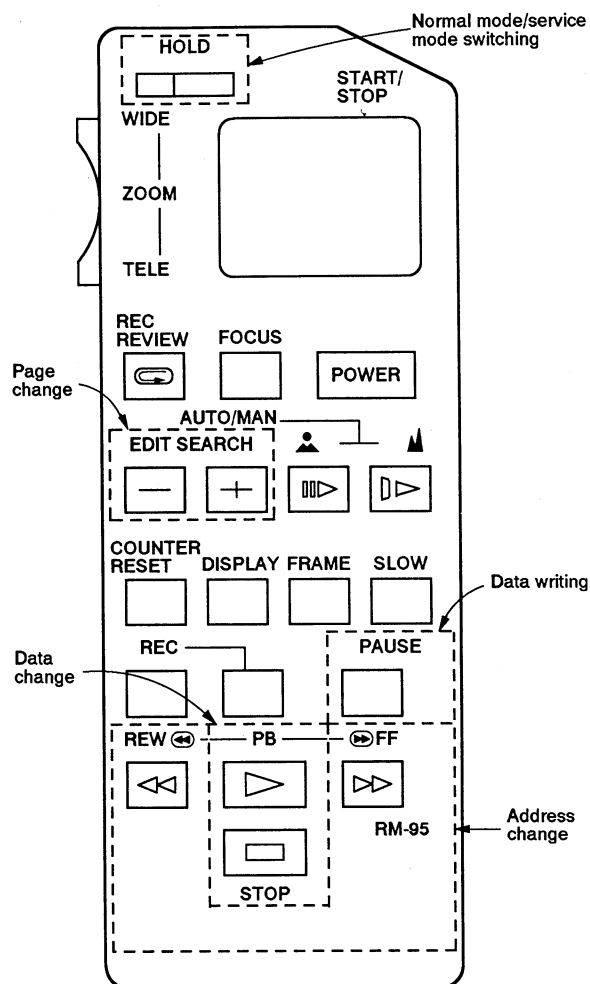


Page	Page Layout
0	
1	D page write protect setting/release
2	Mode controller RAM, I/O
3	Mechanism controller RAM, I/O
4	
5	
6	Shared by camera section
7	Camera controller RAM, I/O
8	
9	
A	2 bytes data display
B	
C	
D	VTR EEPROM (Note 1)
E	
F	Camera EEPROM (Note 2)

LCD Display of the Adjusting Remote Controller

0:00:00  
 Page Data Address

Adjusting remote commander RM-95 (J-6082-053-A)



**Note 1:** The data of this page is written in the EEPROM (IC501 of VS board).

**Note 2:** The data of this page is written in the EEPROM (IC601 of VC board).

## 3-1-8. Service Mode

### 1. Entering the service mode

The service mode consists of the adjustment mode which adjusts the FVS and the test mode which shows the condition of the unit.

The unit can be set into the test mode and adjustment mode by connecting the adjusting remote commander (Set the HOLD input to "HOLD").

#### (1) Service LAMP memory map

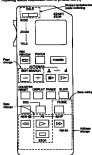


Page	Page Layout
0	
1	2 page video protocol setting screen
2	Main controller BGM, AD
3	Subcontroller controller BGM, AD
4	
5	
6	Based by various action
7	Camera controller BGM, AD
8	
9	
A	2 page data display
B	
C	
D	FVS BGM/AD (Page 1)
E	
F	Camera BGM/AD (Page 2)

### LCD Display of the Adjusting Remote Controller

0:00:00  
Page Time Adjust

#### Adjusting remote commander RM-40 (2-000 000-A)



Page 10 The test of this page is subject to the BGM/AD (BGM) of FVS board.

Page 16 The test of this page is subject to the BGM/AD (BGM) of VC board.

## (2) Category codes

This unit uses category codes for pages 2 and 3.

(Example)

Specification of	Page 2	Category 01	Address 47
------------------	--------	-------------	------------

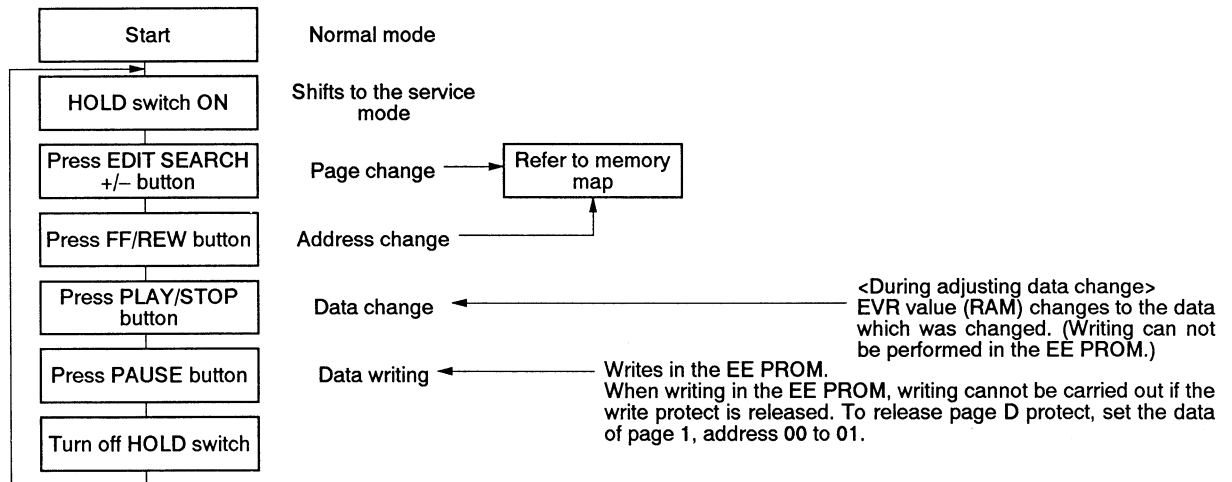
Page 2 is the mode controller

Page 3 is the mechanism controller

The actual category and address are specified by the adjusting remote commander as follows.

Order	Page	Address	Data	Procedure
1	2	00	01	Select category 01 using the data of page 2, address 00. From here onwards, category 01 will be selected at page 2 until the data of page 2, address 01 is rewritten.
2	2	47		As the data of page 2, address 00 is 01, select page 2, address 47 to select page 2, category 01, address 47. (The data of this address is the battery voltage A/D conversion value of the mode controller input.)

[Shifting to the service mode using the adjusting remote commander]



Command Name	Command Function	Normal LANC Command
Page Up	Page+1	Edit Search+
Page Down	Page-1	Edit Search -
Direct Page Set	Sets to the specified page	Event Clear
Address Up	Address+1	Fast Forward
Address Down	Address-1	Rewind
Data Up	Data+1	Play Back
Data Down	Data-1	Stop
Store	Writes data in the EEPROM, RAM	Pause

## (3) Additional note on adjustment

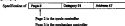
After the completion of the all adjustments, cancell the adjustment mode by either of the following ways.

- 1) Unplug the main power supply and remove the lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
- 2) Return data of the address: 00 on page: 1 to 00. And when data on page: 2 is changed, return the data to the original condition.

### (2) Category codes

The unit uses category codes for pages 1 and 5.

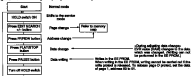
(Example)



The actual category and address are specified by the adjoining remote commands as follows.

Order	Page	Address	Data	Procedure
1	1	00	01	Select category 01 using the data of page 1, address 00. Press back repeatedly, category 01 will be selected at page 2 until the data of page 1, address 00 is received.
2	1	40		At the time of page 1, address 00 is 01, select page 0, address 40 to select page 1, category 01, address 40. (The data of this address is the battery voltage A/D conversion value of the mode controller input.)

(Shifting to the remote mode using the adjoining remote commands)



Removal Name	Command Position	Normal/Adjust Command
Page 1/5 Page 0/5 Start/Stop the Address/5 Address 0/5 Data 0/5 Data 0/5 Data 0/5	Page 1 Page 1 Data in the specified page Address 0/ Address 1 Data 0 Data 0 Data 0 Data 0 in the EEPROM (Data)	Exit Search- Exit Search - Enter Clear Post Forward Forward Play Search Stop Power

### (3) Additional note to adjustment

After the completion of the all adjustments, cancel the adjustment made by either of the following ways.

- Using the main power supply and restores the factory setting. (At this time, data will then and cannot setting have been set by users are cancelled. Factory resetting.)
- Restoring data of the address 00 on page 1 to 01, and when data on page 2 is changed, return the data to the original condition.

## 2. Page D write protect

Release/set the page D write protect.

Page 1	Address 00
--------	------------

Data	Function
00	Normal (Write protect condition)
01	Release the write protect

## 3. Test mode setting

Set/release each test mode. Release the protect (Page: 1, Address: 00, Data: 01) before setting the data.

Page D	Address 02
--------	------------

Data	Function
00	Normal
01	Test mode 1 Various emergency prohibitions and releases Drum, capstan, loading motor, reel, tape top and end, DEW SP/LP automatic discrimination prohibition, manual switching, 5 minutes pause release prohibition Power off prohibition/release by battery end
02	Test mode 2 Not used
03	Test mode 3 Track shift Performs the track shift playback Rear lock distinction prohibition during PB SP/LP automatic discrimination prohibition, manual switching
04	Test mode 4 Rear lock mode Performs rear lock playback SP/LP automatic discrimination prohibition, manual switching

- ※ For page D, the data set will be recorded in the nonvolatile memory by pressing the PAUSE button on the adjusting remote commander. Take note that, in this case, the test mode will not be released even if the main power has been turned off (6.3 Vdc).
- ※ Be sure to return this address data to 00 after completing adjustments/repairs and press the PAUSE button of the adjusting remote commander.

## 4. Emergency code

Fault (error) symptoms can be checked.

Page D	Address E4
--------	------------

Last emergency code

.....Last error code generated (This data will be renewed each time an error occurs.)

Page D	Address E8
--------	------------

2nd emergency code

.....2nd error code generated

Page D	Address EC
--------	------------

First emergency code

.....First error code generated

- ※ Be sure to rewrite the data of addresses E4, E8 and EC to 00 after repairs/adjustments.
- ※ When rewriting the data, be sure to press the PAUSE button of the remote commander after setting the data.

Code	Error Condition
00	No error
01	Loading motor error
02	Reel error during unloading
03	Reel errors at other times
04	Capstan error
05	FG error during drum start up
06	PG error during drum start up
07	FG error during normal drum conditions
08	PG error during normal drum conditions
09	Phase error during normal drum conditions

### B. Page 3 write protocol

Reinitialize the page 3-write protocol.

Page 3	Address 00
Date	Function
00	Normal (write/protocol condition)
01	Failure (no write/protocol)

### C. Test mode setting

Initialize each test mode. (Address for protocol (Page 3), Address 00, Enter 00) before setting the data.

Page 3	Address 00
--------	------------

Date	Function
00	Normal
01	Test mode 1 Various emergency protection and release brake, suspension, landing motor, test input test and and (SPULP automatic distribution protection, manual switching, it simulates power release protection Power-off protection/release by landing and)
02	Test mode 2 Test mode
03	Test mode 3 Test mode Perform the test and playback Power-on distribution protection during PM (SPULP automatic distribution protection, manual switching)
04	Test mode 4 Power test mode Perform test and playback (SPULP automatic distribution protection, manual switching)

- For page 3, the data set will be processed in the immediate memory by pressing the PAUSE button on the adjusting status commander. Take note that, in this case, the test mode will not be released even if the main power has been turned off (p.33 table).

- Be sure to return this address data to 00 after completing adjustment/repair and press the PAUSE button of the adjusting status commander.

### D. Emergency code

Test (error) response can be checked.

Page 3	Address 00
--------	------------

Test emergency code

---Test error code generated (This data will be returned with the error code (table).)

Page 3	Address 00
--------	------------

Test emergency code

---Test error code generated

Page 3	Address 00
--------	------------

Test emergency code

---Test error code generated

- Be sure to verify the data of addresses 04, 06 and 0C to 0E after repair/adjustments.

- When recording the data, be sure to press the PAUSE button of the repair commander after setting the data.

Code	Error condition
00	No error
01	Landing motor error
02	Handover during crutching
03	Handover on other floor
04	Capstan error
05	PM error during clutch start up
06	PM error during brake start up
07	PM error during non-release condition
08	PM error during normal from non-release
09	Power error during normal from non-release



## 5. Emergency mode

The operation mode can be checked during faults.

Page D	Address E5
--------	------------

Last emergency mode

.....The operation mode when the last error is generated  
(This data will be renewed each time an error occurs.)

Page D	Address E9
--------	------------

2nd emergency mode

.....The operation mode when the 2nd error is generated

Page D	Address ED
--------	------------

First emergency mode

.....The operation mode when the first error is generated

※ Be sure to rewrite the data of addresses E5, E9 and ED to 00 after repairs/adjustments.

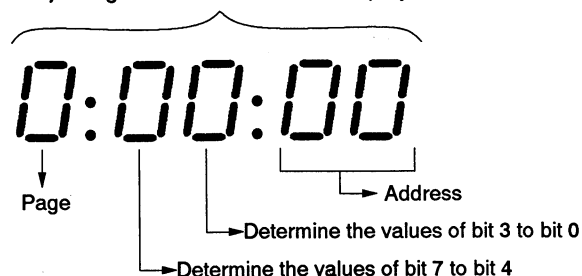
※ When rewriting the data, be sure to press the PAUSE button of the adjusting remote commander after setting the data.

Code	Error Conditions
00	BEFOR INITIALIZE
01	EJECTED
02	NORMAL STOP
03	FF
04	NORMAL REC
06	NORMAL PB
07	PB PAUSE
12	LOADING
14	REC PAUSE
26	X1
27	1/5 SLOW
31	UNLOADING
46	CUE
56	REVIEW
62	STOP TAPE END
66	X2
67	FRAME
72	STOP TAPE TOP
83	REWIND
85	REC REVIEW (+)
95	REC REVIEW (-)
97	-PB PAUSE
A2	EMERGENCY LOADING
A5	EDIT SEARCH (+)
B1	EMERGENCY UNLOADING
B2	STOP EMERGENCY 1
B5	EDIT SEARCH (-)
C2	STOP EMERGENCY 2
E2	STOP NO CASSETTE
F5	EDIT PAUSE

## 6. Bit value discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".

Adjusting remote commander display



Remote controller display	Bit value			
	bit 3 or bit 7	bit 2 or bit 6	bit 1 or bit 5	bit 0 or bit 4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
Ⓐ→ 8	1	0	0	0
9	1	0	0	1
A( A )	1	0	1	0
B( b )	1	0	1	1
C( c )	1	1	0	0
D( d )	1	1	0	1
Ⓑ→ E( E )	1	1	1	0
F( F )	1	1	1	1

**(Example)** If the remote commander display data is "8E", bit values from bit7 to bit4 can be discriminated from column Ⓐ, and those from bit3 to bit0 from column Ⓑ.

#### 4. Emergency mode

The operation mode can be checked during tests.

Page 0	Address 00
--------	------------

#### 1st emergency mode

—The operation mode when the 1st error is generated  
(This test will be repeated each time an error occurs.)

Page 0	Address 00
--------	------------

#### 2nd emergency mode

—The operation mode when the 2nd error is generated

Page 0	Address 00
--------	------------

#### 3rd emergency mode

—The operation mode when the 3rd error is generated

- Be sure to enable the data of addresses 00, 01 and 02 in 02 after expansion/extension.

- When activating the data, be sure to press the PAUSE button of the adjusting mode commander after setting the data.

Code	Error Conditions
00	DEFECT DETECTED
01	SLIP/STOP
02	NORMAL STOP
03	FF
04	NORMAL/REV
05	NORMAL /FS
07	FF PAUSE
10	LOADING
14	REC-PAUSE
20	SL
27	LS SLOW
31	UNLOADING
40	CLS
50	REVERSE
60	STOP CUFF ENG
66	SL
67	PAUSE
70	STOP DATA TOP
80	REVERSE
85	REC REVERSE (-)
86	REC REVERSE (+)
87	-FS PAUSE
90	EMERGENCY LOADING
95	DATA REVERSE (-)
97	EMERGENCY UNLOADING
98	STOP EMERGENCY (-)
99	STOP EMERGENCY (+)
0A	STOP EMERGENCY (-)
0B	STOP REC CANNETTE
0C	STOP PAUSE

#### 4. Bit value identification

The bit values must be discriminated using the display data of the adjusting mode commander by the following items. Use the table below to discriminate if the bit value is "0" or "1".

#### Adjusting mode commander display



Binary commander display	Bit values			
	M 0 or M 7	M 1 or M 8	M 2 or M 9	M 3 or M 6
0	0	0	0	0
1	0	0	0	1
2	0	0	0	1
3	0	0	0	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
A(10)	1	0	1	0
B(11)	1	0	1	1
C(12)	1	1	0	0
D(13)	1	1	0	1
E(14)	1	1	1	0
F(15)	1	1	1	1

- (Example) If the mode commander display data is "0B", bit values from M 0 to M 4 are the discriminated from column ②, and those from M 5 to M 6 from column ③.

## 7. Battery voltage check

Page 2	Category 01	Address 47
--------	-------------	------------

Display Data	Battery Voltage
F0	Approx. 10.6 Vdc
E0	Approx. 9.9 Vdc
D0	Approx. 9.2 Vdc
C0	Approx. 8.5 Vdc
B0	Approx. 7.8 Vdc
A0	Approx. 7.1 Vdc
90	Approx. 6.4 Vdc
80	Approx. 5.7 Vdc
70	Approx. 5.0 Vdc

Using method:

Order	Page	Address	Data	Procedure
1	2	00	01	Specification of category 01
2	2	47		The battery voltage can be discriminated by the display data.

※ Voltage measurement accuracy is approx.  $\pm 10\%$ .

# **T. Battery voltage check**

Page 2	Category 20	Address 47
--------	-------------	------------

Display Data	Battery Voltage
FB	Approx. 10.8 Vdc
FD	Approx. 9.8 Vdc
DD	Approx. 8.8 Vdc
CD	Approx. 8.8 Vdc
BD	Approx. 7.8 Vdc
AD	Approx. 7.7 Vdc
BD	Approx. 6.4 Vdc
BD	Approx. 5.7 Vdc
FD	Approx. 5.8 Vdc

## **Using method**

Order	Page	Address	Item	Procedure
1	2	05	01	Specifications of category 20
2	2	47		The battery voltage can be simulated by the display data.

- Voltage measurement accuracy is approx. ± 10%.

## 8. Mechanism controller input/output check

Page 2	Category 00	Address 83
--------	-------------	------------

Bit	Input Signal	Input Signal Level
0		
1	E/L DET	"1"=Hi8, "0"=Normal
2	SP/LP DET	"1"=SP, "0"=LP
3	CLOG DET	"1"=Clog detected, "0"=Others
4	REC PROOF	"1"=Recording prohibited, "0"=Recording possible
5	TAPE PREEND	"1"=Tape preend, "0"=Others
6	DEW DET	"0"=Condensation occurred, "1"=Others
7	CASSETTE IN	"0"=No cassette

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	83		The condition of each input signal can be discriminated by differentiating the bit value of the display data.

Page 2	Category 00	Address 84
--------	-------------	------------

Bit	Input Signal	Input Signal Level
0	VA PB MODE	"1"=PB, "0"=REC
1	RP PB MODE	"1"=PB, "0"=REC
2	JOG	"1"=Variable speed playback, "0"=Others
3	ME/MP SW	"1"=ME tape, "0"=Other tape
4	Hi8 MP SW	"1"=Hi8 MP tape, "0"=Other tape
5	SERVO OPERATION	"1"=SP mode, "0"=LP mode
6	VIDEO MUTE	"1"=Mute, "0"=Video output
7	AUDIO MUTE	"1"=Mute, "0"=Audio output

Using method:

Order	Page	Address	Data	Procedure
1	2	00	00	Specification of category 00
2	2	84		The condition of each signal can be discriminated by differentiating the bit value of the display data.

## B. Master/slave controller input/output sheet

Page #	Category ID	Address ID
--------	-------------	------------

ID#	Input Signal	Input Signal Level
0		
1	SA DET	"1"=ON, "0"=Off/Not
2	SRPL DET	"1"=ON, "0"=OFF
3	CLDS DET	"1"=On/Onscreen, "0"=Others
4	REC. PRECISE	"1"=Recording past time, "0"=Recording possible
5	TAPE/VIDEO	"1"=Tape present, "0"=Others
6	DEW DET	"0"=Contamination occurred, "1"=Others
7	CASSETTE IN	"0"=No cassette

### Using method:

Order	Page	Address	Data	Preparation
1	2	00	00	Specification of category ID
2	2	00		The condition of each input signal can be discriminated by differentiating the bit value of the display data.

Page #	Category ID	Address ID
--------	-------------	------------

ID#	Input Signal	Input Signal Level
0	10/15 MODE	"1"=15, "0"=100
1	MP/PS MODE	"1"=15, "0"=100
2	POS	"1"=Variable speed playback, "0"=Others
3	10/MP/15V	"1"=10 tape, "0"=Other tape
4	10/MP/15V	"1"=10 MP tape, "0"=Other tape
5	REVERSE OPERATION	"1"=10 mode, "0"=15 mode
6	VIDEO MUTE	"1"=Video, "0"=Video output
7	AUDIO MUTE	"1"=Audio, "0"=Audio output

### Using method:

Order	Page	Address	Data	Preparation
1	2	00	00	Specification of category ID
2	2	04		The condition of each signal can be discriminated by differentiating the bit value of the display data.

## 9. Mode switch and CC DOWN switch check

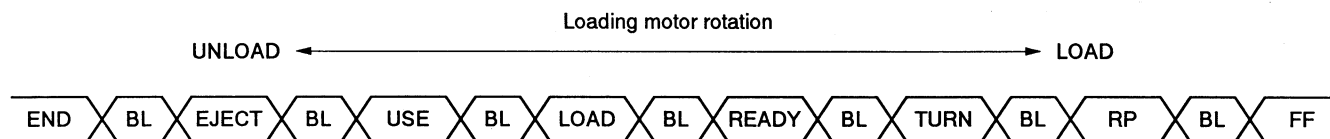
The mode switch position (mechanical section condition) can be checked.

Page 3	Category 00	Address E9
--------	-------------	------------

Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
MSW 2	MSW 1	MSW 0	CC DOWN				

				DATA	POSITION	FUNCTION
0	0	0	0/1	E*/F*	BL	Interval of each position
0	1	1	1	7*	END	FULL END processing (T side lock removal)
0	0	1	1	3*	EJECT	Cassette compartment ejection
1	0	1	1	B*	USE	EJECTED (Unskate end)
0	0	1	0	2*	LOAD	LOADING (Skate in)
1	0	0	0	8*	READY	NORMAL STOP position
1	1	0	0	C*	TURN	OFF of pinch roller only with STOP↔FF/REW (oscillating position)
0	1	0	0	4*	RP	PB, REC, RVS, REV, CUE
0	0	0	0	0*	FF	FF/REW

\*: Don't care



Using method:

Order	Page	Address	Data	Procedure
1	3	00	00	Specification of category 00
2	3	E9		The mode switch position and CC DOWN switch condition can be discriminated by the display data.

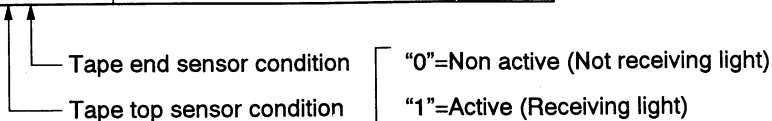




### 10. Tape top/end sensor check

Page 3	Category 02	Address 0A
--------	-------------	------------

Display Data	Tape Top/End Sensor Condition
00	Tape present (Middle of tape)
01	Tape end
10	Tape top
11	No tape



Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	0E	10	Request for tape top/end sampling operations
3	3	0A		The condition of the tape top/end sensor can be discriminated by the display data.

### 11. Version of mechanical control microprocessor

Page 3	Category 02	Address 0B
--------	-------------	------------

Display Data	Microprocessor version
01	Version 1

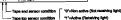
Using method:

Order	Page	Address	Data	Procedure
1	3	00	02	Specification of category 02
2	3	0B		The microprocessor version can be discriminated by the display data.

#### F0. Tape transport sensor check

Page ID	Category ID	Address ID
---------	-------------	------------

Display Data	Tape Transport Sensor Condition
00	Tape present (blocks of tape)
01	Tape end
02	Tape top
11	No tape



#### Using method

Order	Page	Address	Data	Procedure
1	3	00	00	Specification of category 00
2	3	00	00	Request for tape transport display operation
3	3	00		The condition of the tape transport sensor can be discriminated by the display data.

#### F1. Version of microprocessor control microprocessor

Page ID	Category ID	Address ID
---------	-------------	------------

Display Data	Microprocessor version
01	Version 1

#### Using method

Order	Page	Address	Data	Procedure
1	3	00	01	Specification of category 00
2	3	00		The microprocessor version can be discriminated by the display data.

**12. Page D address list for standard 8 mm model  
(CCD-TR42/TR70/TR72/TR80/TR82/TR430/TR550)**

**Note 1:** The adjustment data initial value is the data input before performing video section adjustments (Page D) if the Page D data has been erased due to some reason.

**Note 2:** The data written in the adjustment data memo column are fixed.

After adjusting, check that these data have not been rewritten by mistake.

**Note 3:** In some case, data have been input to the page D address 91 to AF, BC to D3 and F0 to FF. This has no relation to the adjustment.

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
00		Not used		
01		Not used		
02	TEST MODE (MECHA-CON)	Mecha-con (IC505) test mode	00	00
03	TEST MODE (MODE-CON)	Mode-con (IC503) test mode	00	00
04	SW POSITION (L)	Switching position adjustment (Low)	80	
05	SW POSITION (H)	Switching position adjustment (High)	0B	
06	BATTERY END	Battery end adjustment	66	
07	BATTERY PRE-END	Battery end adjustment	7F	
08	BATTERY LOW	Battery end adjustment	84	
09	BATTERY MIDDLE	Battery end adjustment	8A	
0A	BATTERY HIGH	Battery end adjustment	8E	
0B			00	00
0C		Not used		
0D		Not used		
0E		Not used		
0F		Not used		
10		Design data	00	00
11		Design data	00	00
12		Design data	00	00
13		Design data	00	00
14		Design data	95	95
15		Design data	77	77
16		Design data	01	01
17	VARIATION	CCD-TR42/TR70/TR72/TR80/TR82	02	02
		CCD-TR430/TR550	03	03
18	FEATURE	CCD-TR42/TR70/TR72/TR80/TR430	04	04
		CCD-TR82/TR550	64	64
19	FEATURE		80	80
1A	FEATURE	CCD-TR42/TR70/TR82/TR550	58	58
		CCD-TR72/TR80/TR430	DC	DC
1B	FEATURE	CCD-TR42/TR70/TR72/TR80/TR82/TR430	20	20
		CCD-TR550	60	60
1C	FEATURE		00	00
1D	FEATURE		00	00
1E		Not used		
1F		Not used		

Table 7-3-2. (1)

**12. Page D addresses that use standard 8-bit model**  
**(CCD-THRU/THRU/THRU/THRU/THRU/THRU)**

**Note 1:** The adjustment data initial value in the data input before performing video source adjustment (Page D) of the Page D data has been stored due to video source.

**Note 2:** The data written in the adjustment data memory column are fixed.

After adjusting, check that these data have not been rewritten by mistake.

**Note 3:** In some cases, data have been input in the page D address H in 00, 0C in 00 and 00 in 00. This has no relation to the adjustment.

Address	Name	Function [ ] indicates the adjustment voltage output terminal	Adjustment data	
			Initial value	Memory column
00		Not used		
01		Not used		
02	TEST MODE (JACKS.COM)	Monitor use (JACK) test mode	00	00
03	TEST MODE (JACKS.COM)	Monitor use (JACK) test mode	00	00
04	2H POSITION (L)	Deinterlacing position adjustment (Low)	00	
05	2H POSITION (H)	Deinterlacing position adjustment (High)	00	
06	SAFETY 000	Setting and adjustment	04	
07	SAFETY 000-000	Setting and adjustment	07	
08	SAFETY 000	Setting and adjustment	04	
09	SAFETY 000-000	Setting and adjustment	04	
0A	SAFETY 000-000	Setting and adjustment	04	
0B	SAFETY 000-000	Setting and adjustment	00	
0C		Not used		
0D		Not used		
0E		Not used		
0F		Not used		
10		Design data	00	00
11		Design data	00	00
12		Design data	00	00
13		Design data	00	00
14		Design data	00	00
15		Design data	00	00
16		Design data	00	00
17	VARATION	CCD-THRU/THRU/THRU/THRU/THRU/THRU	00	00
18	FEATURE	CCD-THRU/THRU/THRU/THRU/THRU/THRU	00	00
19	FEATURE	CCD-THRU/THRU/THRU/THRU/THRU/THRU	00	00
1A	FEATURE	CCD-THRU/THRU/THRU/THRU/THRU/THRU	00	00
1B	FEATURE	CCD-THRU/THRU/THRU/THRU/THRU/THRU	00	00
1C	FEATURE	CCD-THRU/THRU/THRU/THRU/THRU/THRU	00	00
1D	FEATURE	CCD-THRU/THRU/THRU/THRU/THRU/THRU	00	00
1E		Not used		
1F		Not used		

Table 7-0-2 (3)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
20		Not used		
21		Not used		
22		Not used		
23			00	00
24		Design data	00	00
25		Design data	00	00
26		Design data	14	14
27		Design data	14	14
28		Design data	64	64
29		Design data	64	64
2A		Design data	6E	6E
2B		Design data	6E	6E
2C		Design data	64	64
2D		Design data	64	64
2E		Design data	6E	6E
2F		Design data	6E	6E
30		Design data	DC	DC
31		Design data	DC	DC
32	EVR REC C (SP L ME)	SP Normal ME REC C adjustment [IC951 ⑩]	DC	
33	EVR REC C (SP L MP)	SP Normal MP REC C adjustment [IC951 ⑩]	DC	
34			DC	DC
35			DC	DC
36		Design data	DC	DC
37		Design data	DC	DC
38	EVR REC LOW 1 (ME)	1ch ME REC L adjustment [IC951 ⑳]	E4	
39	EVR REC LOW 1 (MP)	1ch MP REC L adjustment [IC951 ㉑]	EB	
3A	EVR REC LOW 2 (ME)	2ch ME REC L adjustment [IC951 ㉒]	E4	
3B	EVR REC LOW 2 (MP)	2ch MP REC L adjustment [IC951 ㉓]	EB	
3C		Not used		
3D		Not used		
3E		Not used		
3F		Not used		
40		Not used		
41		Not used		
42	EVR REC Y 1CH (L ME)	1ch Normal ME REC Y level adjustment [IC951 ㉔]	A9	
43	EVR REC Y 1CH (L MP)	1ch Normal MP REC Y level adjustment [IC951 ㉕]	A9	
44		Not used		
45		Not used		
46	EVR REC Y 2CH (L ME)	2ch Normal ME REC Y level adjustment [IC951 ㉖]	A9	
47	EVR REC Y 2CH (L MP)	2ch Normal MP REC Y level adjustment [IC951 ㉗]	A9	
48		Not used		
49		Not used		

Table 7-3-2. (2)

Address	Name	Function [ ] indicates the adjustment voltage output terminal	Adjustment data	
			Initial value	Max. value
00		Not used		
01		Not used		
02		Not used		
03			00	00
04		Design data	00	00
05		Design data	00	00
06		Design data	14	14
07		Design data	14	14
08		Design data	04	04
09		Design data	04	04
0A		Design data	08	08
0B		Design data	08	08
0C		Design data	00	04
0D		Design data	00	04
0E		Design data	00	00
0F		Design data	00	00
10		Design data	16	16
11		Design data	1C	1C
12	MPV RNC D (SP L, MS)	SP Normal MP RNC D adjustment (CON1 ⑥)	1C	
13	MPV RNC E (SP L, MP)	SP Normal MP RNC E adjustment (CON1 ⑦)	1C	
14			1C	1C
15			1C	1C
16		Design data	1C	1C
17		Design data	1C	1C
18	MPV RNC LOW 1 (MP)	1st MP RNC LOW adjustment (CON1 ⑧)	14	
19	MPV RNC LOW 1 (MP)	1st MP RNC LOW adjustment (CON1 ⑧)	00	
1A	MPV RNC LOW 2 (MP)	2nd MP RNC L adjustment (CON1 ⑨)	04	
1B	MPV RNC LOW 2 (MP)	2nd MP RNC L adjustment (CON1 ⑨)	00	
1C		Not used		
1D		Not used		
1E		Not used		
1F		Not used		
20		Not used		
21		Not used		
22	MPV RNC Y (CH 2, MS)	1st Normal MP RNC Y level adjustment (CON1 ⑩)	AF	
23	MPV RNC Y (CH 2, MP)	1st Normal MP RNC Y level adjustment (CON1 ⑩)	AF	
24		Not used		
25		Not used		
26	MPV RNC Y CH 2 (L, MS)	2nd Normal MP RNC Y level adjustment (CON1 ⑪)	AF	
27	MPV RNC Y CH 2 (L, MP)	2nd Normal MP RNC Y level adjustment (CON1 ⑪)	AF	
28		Not used		
29		Not used		

Table 7-0-2 (2)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
4A		Not used		
4B		Not used		
4C		Not used		
4D		Not used		
4E		Not used		
4F		Not used		
50		Design data	A2	A2
51		Design data	A1	A1
52		Not used		
53		Not used		
54			00	00
55			00	00
56			90	90
57			00	00
58			00	00
59			75	75
5A			E6	E6
5B			E6	E6
5C			E6	E6
5D			E6	E6
5E	EVR MT 1CH (L)	1ch Normal frequency characteristic adjustment [IC951 ⑱]	E6	
5F			E2	E2
60			E2	E2
61			E2	E2
62			E2	E2
63	EVR MT 2CH (L)	2ch Normal frequency characteristic adjustment [IC951 ⑳]	E2	
64		Not used		
65		Not used		
66		Not used		
67		Not used		
68		Not used		
69			E6	E6
6A			E6	E6
6B			E6	E6
6C			E6	E6
6D			E6	E6
6E		Not used		
6F		Not used		
70	EVR SYNC AGC	SYNC AGC adjustment [IC951 ㉔]	8E	
71	EVR COMB ADJ	Chroma comb filter adjustment [IC951 ㉕]	95	
72			B0	B0
73			B0	B0

Table 7-3-2. (3)

Address	Name	Function     contains the adjustment voltage output terminal	Adjustment Data	
			Initial value	Min/max
3A		Not used		
3B		Not used		
3C		Not used		
3D		Not used		
3E		Not used		
3F		Not used		
40		Design data	A0	A1
41		Design data	A1	A1
42		Not used		
43		Not used		
44			00	00
45			00	00
46			00	00
47			00	00
48			00	00
49			00	00
4A			00	00
4B			00	00
4C			00	00
4D			00	00
4E			00	00
4F			00	00
50			00	00
51	ENV MT (C2)(C1)	1st Normal frequency characteristic adjustment (C2)(C1)	00	
52			00	00
53			00	00
54			00	00
55			00	00
56	ENV MT (C2)(C1)	2nd Normal frequency characteristic adjustment (C2)(C1)	00	
57		Not used		
58		Not used		
59		Not used		
5A		Not used		
5B		Not used		
5C			00	00
5D			00	00
5E		Not used		
5F		Not used		
60			00	00
61			00	00
62			00	00
63			00	00
64			00	00
65			00	00
66			00	00
67			00	00
68			00	00
69			00	00
6A			00	00
6B			00	00
6C			00	00
6D			00	00
6E		Not used		
6F		Not used		
70	ENV SYNC-A/D	ENV SYNC-A/D adjustment (C2)(C1)	00	
71	ENV CORR-A/D	Channel cross filter adjustment (C2)(C1)	00	00
72			00	00
73			00	00

Table 7-4-12 (2)



#### 14. Chroma Bandwidth Adjustment (VR board)

Bandwidth center frequency setting. If deviated, the screen becomes white.

Mode	Playback
Signal	Adjustment type: For shooting operations (VIDEO-SDSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Video scope
Adjustment Page	0
Adjustment Address	#1 (C. BAND) (VR) #0 (C. BAND) (SD)
Specify Value	The path from the blue luminance point to black luminance point should be a straight line.

##### Adjusting method

- 1) Page 1, address 00, data 00
- 2) Change the data of page 02, address 11, and adjust so that the path from the blue luminance point to black luminance point becomes a straight line.
- 3) Press the F4 (SD) button of the adjusting remote commander.
- 4) Set the range data in address 01 of page 02 to address 00 of page 01.
- 5) Press F4 (SD) button of the adjusting remote commander.



Fig. 7-4-20

#### 15. Chroma Filter Phase Adjustment (VR board)

Set the level and phase of the CR delayed signal for the main flux. If deviated, the screen shows a decrease of both in played back picture.

Mode	Playback
Signal	Adjustment type: For shooting operations (VIDEO-SDSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Video scope
Adjustment Address	#V200 (HSA-000)
Adjustment Page	0
Adjustment Address	T1 (CUBA-A00)
Specify Value	Mainflux color luminance point movement when the "SD" switch is turned on/off

Note 1) Turn the SD ON/OFF at the same screen.

##### Adjusting method

- 1) Page 1, address 00, data 00
- 2) Minimize the movement of the color luminance point when the switch is ON/OFF.
- 3) Change the data of page 02, address T1 and minimize the movement of the color luminance point when the switch is on/off.
- 4) Press the F4 (SD) button of the adjusting remote commander.
- 5) Repeat steps 2) to 4).



Fig. 7-4-21

Address	Name	Function [ ] contains the adjustment voltage-output terminal	Adjustment data	
			Initial value	Normal column
14		Not used		
15	EPG CHANNEL (L)	Normal 17.7V center frequency adjustment (ICM1 [8])	00	
16		Not used		
17	EPG DEVIATION (L)	Normal 17.7V deviation adjustment (ICM1 [9])	07	
18			00	00
19			00	00
1A			00	00
1B			00	00
1C			00	00
1D			00	00
1E			00	00
1F			00	00
20	EPG C-DMPS (R)	DE channel amplitude adjustment (ICM1 [8])	00	
21	EPG C-DMPS (R)	PE channel amplitude adjustment (ICM1 [8])	00	
22	EPG DMPS (L)	DE DMPS input level adjustment (ICM1 [9])	A7	
23	EPG DMPS (R)	PE DMPS input level adjustment (ICM1 [9])	A7	
24		Not used		
25			00	00
26			00	00
27	EPG DE-DMPS (R L)	Normal PE DE-DMPS level adjustment (ICM1 [8])	00	
28			00	00
29			00	00
2A			00	00
2B			00	00
2C	EPG AUDIO MATRIX (R)	PE audio adjustment (ICM1 [8]) (ICD-TRC00000000)	A7	
2D	EPG AUDIO MATRIX (R)	PE audio adjustment (ICM1 [8]) (ICD-TRC00000000)	A7	
2E	EPG 1.7 MHz DEV	1.7 MHz deviation adjustment (ICM1 [8]) (ICD-TRC00000000)	A7	
2F	EPG 1.5 MHz DEV	1.5 MHz deviation adjustment (ICM1 [8])	A7	
30			00	00
31 to 4F				
50	BRIGHT	Bright adjustment (ICM0 [7]) (ICD-TRC00000000)	A0	
51	COLOR	Color setting (ICM0 [8]) (ICD-TRC00000000)	A0	A0
52	HUE	Hue setting (ICM0 [8]) (ICD-TRC00000000)	00	00
53	SUB BRIGHT B	Sub-bright B adjustment (ICM0 [8]) (ICD-TRC00000000)	7A	
54	SUB BRIGHT R	Sub-bright R adjustment (ICM0 [8]) (ICD-TRC00000000)	6A	
55	CONTRAST	Contrast adjustment (ICM0 [8]) (ICD-TRC00000000)	70	
56	VCO	VCO adjustment (ICM0 [8]) (ICD-TRC00000000)	00	
57	POWER/TEMP. ADJUST	Current compensation adjustment (ICM0 [8]) (ICD-TRC00000000)	30	
58	SUB CONTRAST B	Sub-contrast B setting (ICM0 [8]) (ICD-TRC00000000)	7A	7A
59	SUB CONTRAST R	Sub-contrast R setting (ICM0 [8]) (ICD-TRC00000000)	7A	7A
5A	Gamma 1	Gamma 1 setting (ICM0 [8]) (ICD-TRC00000000)	70	70

Table F-24. (3)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
BB	GAMMA 2	Gamma 2 setting [IC903 ⑫] CCD-TR70/TR80	F0	F0
BC to D3				
D4	CCD FLAW DATA	CCDimager correction data (for backup) ※ Refer "CCD Imager Correction Data Writing" of Camera Section Adjustments		
D5	CCD FLAW DATA			
D6	CCD FLAW DATA			
D7	CCD FLAW DATA			
D8	CCD FLAW DATA			
D9	CCD FLAW DATA			
DA	CCD FLAW DATA			
DB	CCD FLAW DATA			
DC	CCD FLAW DATA			
DD	CCD FLAW DATA			
DE	CCD FLAW DATA			
DF	CCD FLAW DATA			
E0	CCD FLAW DATA			
E1	CCD FLAW DATA			
E2	CCD FLAW DATA			
E3	CCD FLAW DATA			
E4	EMERGENCY LAST CODE	Last emergency code	00	
E5	EMERGENCY LAST MODE	Last emergency mode	00	
E6		N.C.	00	
E7		N.C.	00	
E8	EMERGENCY 2ND CODE	2nd emergency code	00	
E9	EMERGENCY 2ND MODE	2nd emergency mode	00	
EA		N.C.	00	
EB		N.C.	00	
EC	EMERGENCY 1ST CODE	1st emergency code	00	
ED	EMERGENCY 1ST MODE	1st emergency mode	00	
EE		N.C.	00	
EF		N.C.	00	

Table 7-3-2. (5)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Minimum customer
00	Command 1	Command 1 setting (CODE=0) (C) 1-1 to 1000	00	00
01 to 03				
04	CCD PLAIN DATA	CCD image correction data (for testing) ■ Refer "CCD Image Correction Data Writing" of Camera Section Adjustment		
05	CCD PLAIN DATA			
06	CCD PLAIN DATA			
07	CCD PLAIN DATA			
08	CCD PLAIN DATA			
09	CCD PLAIN DATA			
0A	CCD PLAIN DATA			
0B	CCD PLAIN DATA			
0C	CCD PLAIN DATA			
0D	CCD PLAIN DATA			
0E	CCD PLAIN DATA			
0F	CCD PLAIN DATA			
10	CCD PLAIN DATA			
11	CCD PLAIN DATA			
12	CCD PLAIN DATA			
13	CCD PLAIN DATA			
14	EMERGENCY LAST CODE	Last emergency code	00	
15	EMERGENCY LAST MODE	Last emergency mode	00	
16		N.C.	00	
17		N.C.	00	
18	EMERGENCY 1ST CODE	1st emergency code	00	
19	EMERGENCY 1ST MODE	1st emergency mode	00	
1A		N.C.	00	
1B		N.C.	00	
1C	EMERGENCY 2ND CODE	2nd emergency code	00	
1D	EMERGENCY 2ND MODE	2nd emergency mode	00	
1E		N.C.	00	
1F		N.C.	00	

Table F-4-6 (2)

**13. Page D address list for HI8 model  
(CCD-TR400/TR750)**

**Note 1:** The adjustment data initial value is the data input before performing video section adjustments (Page D) if the Page D data has been erased due to some reason.

**Note 2:** The data written in the adjustment data memo column are fixed.

After adjusting, check that these data have not been rewritten by mistake.

**Note 3:** In some case, data have been input to the page D address 91 to D3 and F0 to FF. This has no relation to the adjustment.

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
00		Not used		
01		Not used		
02	TEST MODE (MECHA-CON)	Mecha-con (IC505) test mode	00	00
03	TEST MODE (MODE-CON)	Mode-con (IC503) test mode	00	00
04	SW POSITION (L)	Switching position adjustment (Low)	80	
05	SW POSITION (H)	Switching position adjustment (High)	0B	
06	BATTERY END	Battery end adjustment	66	
07	BATTERY PRE-END	Battery end adjustment	7F	
08	BATTERY LOW	Battery end adjustment	84	
09	BATTERY MIDDLE	Battery end adjustment	8A	
0A	BATTERY HIGH	Battery end adjustment	8E	
0B			00	00
0C		Not used		
0D		Not used		
0E		Not used		
0F		Not used		
10			00	00
11			00	00
12			00	00
13			00	00
14			95	95
15			77	77
16			01	01
17	VARIATION	CCD-TR400	12	12
		CCD-TR750	13	13
18	FEATURE		E8	E8
19	FEATURE		80	80
1A	FEATURE		DC	DC
1B	FEATURE	CCD-TR400	20	20
		CCD-TR750	60	60
1C	FEATURE		00	00
1D	FEATURE		00	00
1E		Not used		
1F		Not used		

Table 7-3-3. (1)

**12. Page D address list for M8 model  
(CCD-TRADR/DR/DR)**

**Note 1:** The adjustment data initial value is the data input before performing video picture adjustment (Page 12) if the Page D data has been cleared due to power reset.

**Note 2:** The data written in the adjustment data memory column are fixed.

After adjusting, check that these data have not been accidentally released.

**Note 3:** In some cases, data have been input to the page D address 00, to D5 and D6 to D7. This has no relation to the adjustment.

Address	Name	Function [ ] contains the adjustment settings output terminal	Adjustment data	
			Initial value	Memory column
00		Not used		
01		Not used		
02	TEST MODE (MICRO-CLIP)	Mode-00 (LOW) test mode	00	00
03	TEST MODE (MICRO-CLIP)	Mode-01 (HIGH) test mode	00	00
04	SW POSITION (LOW)	Switchover position adjustment (Low)	00	
05	SW POSITION (H)	Switchover position adjustment (High)	00	
06	SCATTER (LOW)	Scatter and adjustment	00	
07	SCATTER (MIDDLE)	Scatter and adjustment	77	
08	SCATTER (HIGH)	Scatter and adjustment	00	
09	SCATTER (MIDDLE)	Scatter and adjustment	00	
0A	SCATTER (HIGH)	Scatter and adjustment	00	
0B			00	00
0C		Not used		
0D		Not used		
0E		Not used		
0F		Not used		
10			00	00
11			00	00
12			00	00
13			00	00
14			00	00
15			77	77
16			01	01
17	VELOCITY	CCD-TRADR CCD-DRADR	11	11
18	FEATURE		00	00
19	FEATURE		00	00
1A	FEATURE		00	00
1B	FEATURE	CCD-TRADR CCD-DRADR	00	00
1C	FEATURE		00	00
1D	FEATURE		00	00
1E		Not used		
1F		Not used		

Table 7-4-4 (p)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
20		Not used		
21		Not used		
22		Not used		
23			03	03
24		Design data	00	00
25		Design data	00	00
26		Design data	1C	1C
27		Design data	25	25
28		Design data	D8	D8
29		Design data	E5	E5
2A		Design data	DC	DC
2B		Design data	EF	EF
2C		Design data	D8	D8
2D		Design data	E5	E5
2E		Design data	DC	DC
2F		Design data	EF	EF
30	EVR REC C (SP E ME)	SP Hi8 ME REC C adjustment [IC951 ⑩]	E6	
31	EVR REC C (SP E MP)	SP Hi8 MP REC C adjustment [IC951 ⑩]	E6	
32	EVR REC C (SP L ME)	SP Normal ME REC C adjustment [IC951 ⑩]	E6	
33	EVR REC C (SP L MP)	SP Normal MP REC C adjustment [IC951 ⑩]	E6	
34	EVR REC C (LP E ME)	LP Hi8 ME REC C adjustment [IC951 ⑩]	E6	E6
35	EVR REC C (LP E MP)	LP Hi8 MP REC C adjustment [IC951 ⑩]	E6	E6
36	EVR REC C (LP L ME)	LP Normal ME REC C adjustment [IC951 ⑩]	E6	E6
37	EVR REC C (LP L MP)	LP Normal MP REC C adjustment [IC951 ⑩]	E6	E6
38	EVR REC LOW 1 (ME)	1ch ME REC L adjustment [IC951 ⑳]	D6	
39	EVR REC LOW 1 (MP)	1ch MP REC L adjustment [IC951 ⑳]	E0	
3A	EVR REC LOW 2 (ME)	2ch ME REC L adjustment [IC951 ⑳]	D6	
3B	EVR REC LOW 2 (MP)	2ch MP REC L adjustment [IC951 ⑳]	E0	
3C		Not used		
3D		Not used		
3E		Not used		
3F		Not used		
40	EVR REC Y 1CH (E ME)	1ch Hi8 ME REC Y level adjustment [IC951 ㉔]	D8	
41	EVR REC Y 1CH (E MP)	1ch Hi8 MP REC Y level adjustment [IC951 ㉔]	DD	
42	EVR REC Y 1CH (L ME)	1ch Normal ME REC Y level adjustment [IC951 ㉔]	DC	
43	EVR REC Y 1CH (L MP)	1ch Normal MP REC Y level adjustment [IC951 ㉔]	D5	
44	EVR REC Y 2CH (E ME)	2ch Hi8 ME REC Y level adjustment [IC951 ㉔]	D8	
45	EVR REC Y 2CH (E MP)	2ch Hi8 MP REC Y level adjustment [IC951 ㉔]	DD	
46	EVR REC Y 2CH (L ME)	2ch Normal ME REC Y level adjustment [IC951 ㉔]	DC	
47	EVR REC Y 2CH (L MP)	2ch Normal MP REC Y level adjustment [IC951 ㉔]	D5	
48		Not used		
49		Not used		

Table 7-3-3. (2)

Address	Name	Function ( ) contains the adjustment settings output terminal	Adjustment data	
			Initial value	Range
22		Reserved		
23		Reserved		
24		Reserved		
25			00	00
26		Design data	00	00
27		Design data	00	00
28		Design data	00	00
29		Design data	00	00
30		Design data	00	00
31		Design data	00	00
32		Design data	00	00
33		Design data	00	00
34		Design data	00	00
35		Design data	00	00
36		Design data	00	00
37		Design data	00	00
38		Design data	00	00
39		Design data	00	00
40	SPN RSC C (SP S MD)	SP Normal MP RSC C adjustment (C001) (0)	00	
41	SPN RSC C (SP S MP)	SP Normal MP RSC C adjustment (C001) (0)	00	
42	SPN RSC C (SP L MD)	SP Normal MP RSC C adjustment (C001) (0)	00	
43	SPN RSC C (SP L MP)	SP Normal MP RSC C adjustment (C001) (0)	00	
44	SPN RSC C (LP S MD)	LP Normal MP RSC C adjustment (C001) (0)	00	00
45	SPN RSC C (LP S MP)	LP Normal MP RSC C adjustment (C001) (0)	00	00
46	SPN RSC C (LP L MD)	LP Normal MP RSC C adjustment (C001) (0)	00	00
47	SPN RSC C (LP L MP)	LP Normal MP RSC C adjustment (C001) (0)	00	00
48	SPN RSC L (SP L MD)	SP Normal MP RSC L adjustment (C001) (0)	00	00
49	SPN RSC L (SP L MP)	SP Normal MP RSC L adjustment (C001) (0)	00	00
50	SPN RSC L (SP S MD)	SP Normal MP RSC L adjustment (C001) (0)	00	00
51	SPN RSC L (SP S MP)	SP Normal MP RSC L adjustment (C001) (0)	00	00
52	SPN RSC L (LP L MD)	LP Normal MP RSC L adjustment (C001) (0)	00	00
53	SPN RSC L (LP L MP)	LP Normal MP RSC L adjustment (C001) (0)	00	00
54	SPN RSC L (LP S MD)	LP Normal MP RSC L adjustment (C001) (0)	00	00
55	SPN RSC L (LP S MP)	LP Normal MP RSC L adjustment (C001) (0)	00	00
56		Not used		
57		Not used		
58		Not used		
59		Not used		
60	SPN RSC Y (SP S MD)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
61	SPN RSC Y (SP S MP)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
62	SPN RSC Y (SP L MD)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
63	SPN RSC Y (SP L MP)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
64	SPN RSC Y (SP S MD)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
65	SPN RSC Y (SP S MP)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
66	SPN RSC Y (SP L MD)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
67	SPN RSC Y (SP L MP)	SP Normal MP RSC Y level adjustment (C001) (0)	00	
68		Not used		
69		Reserved		

Table 7-10-3 (2)



Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
4A		Not used		
4B		Not used		
4C		Not used		
4D		Not used		
4E		Not used		
4F		Not used		
50			D3	D3
51			CE	CE
52		Not used		
53		Not used		
54			C2	C2
55			C2	C2
56			97	97
57			70	70
58			70	70
59			85	85
5A	EVR MT 1CH (SP E ME)	1ch SP Hi8 ME frequency characteristic adjustment [IC951 ⑩]	DC	
5B	EVR MT 1CH (SP E MP)	1ch SP Hi8 MP frequency characteristic adjustment [IC951 ⑩]	DC	
5C	EVR MT 1CH (LP E ME)	1ch LP Hi8 ME frequency characteristic adjustment [IC951 ⑩]	DC	
5D	EVR MT 1CH (LP E MP)	1ch LP Hi8 MP frequency characteristic adjustment [IC951 ⑩]	DC	
5E	EVR MT 1CH (L)	1ch Normal frequency characteristic adjustment [IC951 ⑩]	DC	
5F	EVR MT 2CH (SP E ME)	2ch SP Hi8 ME frequency characteristic adjustment [IC951 ⑳]	CD	
60	EVR MT 2CH (SP E MP)	2ch SP Hi8 MP frequency characteristic adjustment [IC951 ⑳]	CD	
61	EVR MT 2CH (LP E ME)	2ch LP Hi8 ME frequency characteristic adjustment [IC951 ⑳]	CD	
62	EVR MT 2CH (LP E MP)	2ch LP Hi8 MP frequency characteristic adjustment [IC951 ⑳]	CD	
63	EVR MT 2CH (L)	2ch Normal frequency characteristic adjustment [IC951 ⑳]	CD	
64		Not used		
65		Not used		
66		Not used		
67		Not used		
68		Not used		
69			DC	DC
6A			DC	DC
6B			DC	DC
6C			DC	DC
6D			DC	DC
6E		Not used		
6F		Not used		
70	EVR SYNC AGC	SYNC AGC adjustment [IC951 ㉔]	8E	
71	EVR COMB ADJ	Chroma comb filter adjustment [IC951 ㉔]	95	
72			B0	B0
73			B0	B0

Table 7-3-3. (3)

Address	Name	Function ( ) indicates the adjustment voltage output terminal	Adjustment data	
			Initial value	Minimum value
4A		Not used		
4B		Not used		
4C		Not used		
4D		Not used		
4E		Not used		
4F		Not used		
50			00	00
51			00	00
52		Not used		
53		Not used		
54			00	00
55			00	00
56			00	00
57			00	00
58			00	00
59			00	00
5A	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
5B	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
5C	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
5D	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
5E	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
5F	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
60	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
61	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
62	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
63	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
64	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
65	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
66	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
67	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
68	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
69	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
6A	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
6B	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
6C	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
6D	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
6E	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
6F	ENV_MF_120 (0.1-0.4)	1st 0.1-0.4 MHz frequency characteristic adjustment (ENV_0)	00	
70	ENV_SYNC_ADC	SYNC_ADC adjustment (ENV_0)	00	
71	ENV_COMP_ADC	Compensation filter adjustment (ENV_0)	00	
72			00	00
73			00	00

Table 7-3-3 (2)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
74	EVR CARRIER (E)	Hi8 Y-FM carrier frequency adjustment [IC951 ④③]	C3	
75	EVR CARRIER (L)	Normal Y-FM carrier frequency adjustment [IC951 ④③]	BB	
76	EVR DEVIATION (E)	Hi8 Y-FM deviation adjustment [IC951 ④④]	A6	
77	EVR DEVIATION (L)	Normal Y-FM deviation adjustment [IC951 ④④]	97	
78			59	59
79			53	53
7A			7B	7B
7B			7B	7B
7C			00	00
7D			00	00
7E			00	00
7F			00	00
80	EVR C EMPH (EE)	EE chroma emphasis adjustment [IC951 ④②]	99	
81	EVR C EMPH (PB)	PB chroma emphasis adjustment [IC951 ④②]	99	
82	EVR EMPH (EE)	EE EMPH input level adjustment [IC951 ④⑧]	A5	
83	EVR EMPH (PB)	PB EMPH input level adjustment [IC951 ④⑧]	90	
84		Not used		
85			AA	AA
86	EVR DE-EMPH (PB E)	Hi8 PB DE-EMPH level adjustment [IC951 ④⑦]	B0	
87	EVR DE-EMPH (PB L)	Normal PB DE-EMPH level adjustment [IC951 ④⑦]	A2	
88			00	00
89			00	00
8A			00	00
8B			48	48
8C	EVR AUDIO MATRIX (EE)	EE matrix adjustment [IC951 ②③]	AF	
8D	EVR AUDIO MATRIX (PB)	PB matrix adjustment [IC951 ②③]	AF	
8E	EVR 1.7 MHz DEV	1.7 MHz deviation adjustment [IC951 ②⑥]	AF	
8F	EVR 1.5 MHz DEV	1.5 MHz deviation adjustment [IC951 ②⑦]	AF	
90			60	60
91 to D3				
D4	CCD FLAW PATTERN	CCDimager correction data (for backup) ※ Refer "CCD Imager Correction Data Writing" of Camera Section Adjustments		
D5	CCD FLAW DATA			
D6	CCD FLAW DATA			
D7	CCD FLAW DATA			
D8	CCD FLAW DATA			
D9	CCD FLAW DATA			
DA	CCD FLAW DATA			
DB	CCD FLAW DATA			
DC	CCD FLAW DATA			
DD	CCD FLAW DATA			
DE	CCD FLAW DATA			
DF	CCD FLAW DATA			

Table 7-3-3. (4)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Store contents
74	DVR CARDSER (S)	SR 7-Pin audio frequency adjustment (IC04) [4]	00	
75	DVR CARDSER (L)	Normal 7-Pin audio frequency adjustment (IC04) [4]	00	
76	DVR SERVO MOTOR (S)	SR 7-Pin servomotor adjustment (IC05) [4]	A4	
77	DVR SERVO MOTOR (L)	Normal 7-Pin servomotor adjustment (IC05) [4]	00	
78			00	00
79			00	00
7A			00	00
7B			00	00
7C			00	00
7D			00	00
7E			00	00
7F			00	00
80	DVR I (CAM) (PR)	IR camera amplitude adjustment (IC06) [4]	00	
81	DVR I (CAM) (PB)	IR camera amplitude adjustment (IC06) [4]	00	
82	DVR BATH (PR)	IR BATH input level adjustment (IC07) [4]	A3	
83	DVR BATH (PB)	IR BATH input level adjustment (IC07) [4]	00	
84		Not used		
85			A4	A4
86	DVR DR-CAM (PR L)	SR PR-DR-CAM (L) level adjustment (IC08) [4]	00	
87	DVR DR-CAM (PR T)	Normal PR-DR-CAM (L) level adjustment (IC08) [4]	A3	
88			00	00
89			00	00
8A			00	00
8B			40	40
8C	DVR AUDIO MATRIX (SD)	IR audio adjustment (IC09) [4]	A7	
8D	DVR AUDIO MATRIX (PB)	IR audio adjustment (IC09) [4]	A7	
8E	DVR L7 MTR (PR)	L7 audio deviation adjustment (IC0A) [4]	A7	
8F	DVR L7 MTR (PB)	L7 audio deviation adjustment (IC0A) [4]	A7	
90			00	00
91 to 9F				
9A	CCD-FLASH PARTISON	CCD-Image correction data (for testing) ■ Refer "CCD-Image Correction (Data Writing)" of Camera Section Adjustments		
9B	CCD-FLASH DATA			
9C	CCD-FLASH DATA			
9D	CCD-FLASH DATA			
9E	CCD-FLASH DATA			
9F	CCD-FLASH DATA			
9A	CCD-FLASH DATA			
9B	CCD-FLASH DATA			
9C	CCD-FLASH DATA			
9D	CCD-FLASH DATA			
9E	CCD-FLASH DATA			
9F	CCD-FLASH DATA			
9A	CCD-FLASH DATA			
9B	CCD-FLASH DATA			
9C	CCD-FLASH DATA			

Table 7-04: (9)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
E0	CCD FLAW DATA	CCDimager correction data (for backup) ※ Refer “CCD Imager Correction Data Writing” of Camera Section Adjustments		
E1	CCD FLAW DATA			
E2	CCD FLAW DATA			
E3	CCD FLAW DATA			
E4	EMERGENCY LAST CODE	Last emergency code	00	
E5	EMERGENCY LAST MODE	Last emergency mode	00	
E6		N.C.	00	
E7		N.C.	00	
E8	EMERGENCY 2ND CODE	2nd emergency code	00	
E9	EMERGENCY 2ND MODE	2nd emergency mode	00	
EA		N.C.	00	
EB		N.C.	00	
EC	EMERGENCY 1ST CODE	1st emergency code	00	
ED	EMERGENCY 1ST MODE	1st emergency mode	00	
EE		N.C.	00	
EF		N.C.	00	

Table 7-3-3. (5)

Address	Name	Function ( ) describes the adjustment voltage output terminal	Adjustment data	
			Initial value	Range (default)
00	OC0 PLAN DATA	OC0 Output correction data (by factory) ■ Refer "OC0 Output Correction Data Writing" of General Section Adjustment		
01	OC0 PLAN DATA			
02	OC0 PLAN DATA			
03	OC0 PLAN DATA			
04	EMERGENCY LIFT CODE	Low emergency mode	00	
05	EMERGENCY LIFT MODE	Low emergency mode	00	
06		N.C.	00	
07		N.C.	00	
08	EMERGENCY 2ND CODE	2nd emergency mode	00	
09	EMERGENCY 2ND MODE	2nd emergency mode	00	
0A		N.C.	00	
0B		N.C.	00	
0C	EMERGENCY 1ST CODE	1st emergency mode	00	
0D	EMERGENCY 1ST MODE	1st emergency mode	00	
0E		N.C.	00	
0F		N.C.	00	

Table 7-0-3. (2)

## 3-2. POWER SYSTEM ADJUSTMENTS

### 1. Oscillator Frequency Check (DD board)

Mode	Camera record
Subject	Arbitrary
Measurement Point	Q905 collector
Measuring Instrument	Frequency counter
Specified Value	500 ± 50 kHz

Adjusting method:

- 1) Check that the oscillator frequency satisfies the specified value.

### 2. Power Voltage Check (DD board)

Mode	Camera record
Subject	Arbitrary
Measuring Instrument	Digital voltmeter
D5V check	
Measurement Point	Pin ②⑨ of CN901
Specified Value	4.9 ± 0.1 Vdc
EVF5V check	
Measurement Point	Pin ③⑨ of CN901
Specified Value	4.9 ± 0.1 Vdc
VID 5V check	
Measurement Point	Pins ②③ and ②④ of CN901
Specified Value	4.9 ± 0.1 Vdc
AU 5V check	
Measurement Point	Pin ③⑤ of CN901
Specified Value	4.9 ± 0.1 Vdc
RP 5V check	
Measurement Point	Pin ②⑩ of CN901
Specified Value	4.9 ± 0.1 Vdc
CAM5V check	
Measurement Point	Pins ②⑤ and ②⑥ of CN901
Specified Value	4.85 ± 0.1 Vdc
SS 3.6V check	
Measurement Point	Pin ③③ of CN901
Specified Value	3.6 ± 0.1 Vdc
D3.6V check	
Measurement Point	Pins ②① and ②② of CN901
Specified Value	3.6 ± 0.1 Vdc
CAM 15V check	
Measurement Point	Pin ②⑦ of CN901
Specified Value	15 ± 0.3 Vdc
CAM -8.5V check	
Measurement Point	Pin ③① of CN901
Specified Value	-8.5 <sup>+0.25</sup> <sub>-0.4</sub> Vdc
MT 5V check	
Measurement Point	Pins ②⑨, ②⑩ and ②⑪ of CN901
Specified Value	5.0 ± 0.1 Vdc

## 3-3. SYSTEM CONTROL SYSTEM ADJUSTMENTS

### 1. Page D Initial Value Input

If the page D data has been erased due to some cause, input the page D initial value before performing adjustments. For details on the initial value, refer to "Page D address list" in "3-1-8. Service Mode".

Mode	E-E
Signal	Arbitrary
Adjustment Page	D
Adjustment Address	00 to 90, [B0 to BB], (D4 to EF)

[ ] : CCD-TR70/TR80

Input method:

- 1) Page: 1, address: 00, data: 01
- 2) Select page D, and input the initial value to each address.  
(After setting the data (initial value), be sure to press the PAUSE button of the adjusting remote commander before changing the address.)

## 3-4. POWER-SYSTEM ADJUSTMENTS

### 1. Oscillator Frequency Check (30 board)

Mode	Control circuit
Signal	Arbitrary
Measurement Point	OSC indicator
Adjusting Instrument	Frequency counter
Specified Value	900 Hz $\pm$ 10 kHz

Adjusting method:

- Check that the oscillator frequency satisfies the specified value.

### 2. Power Voltage Checks (30 board)

Mode	Control circuit
Signal	Arbitrary
Measuring Instrument	Digital voltmeter
10V check	
Measurement Point	Pin $\textcircled{1}$ of C9001
Specified Value	4.0 V $\pm$ 0.1 Vdc
100V check	
Measurement Point	Pin $\textcircled{2}$ of C9001
Specified Value	4.0 V $\pm$ 0.1 Vdc
100-1V check	
Measurement Point	Pin $\textcircled{1}$ and $\textcircled{2}$ of C9001
Specified Value	4.0 V $\pm$ 0.1 Vdc
all 10V check	
Measurement Point	Pin $\textcircled{1}$ of C9001
Specified Value	4.0 V $\pm$ 0.1 Vdc
10-1V check	
Measurement Point	Pin $\textcircled{1}$ of C9001
Specified Value	4.0 V $\pm$ 0.1 Vdc
100-1V check	
Measurement Point	Pin $\textcircled{1}$ of C9001
Specified Value	4.0 V $\pm$ 0.1 Vdc
100V check	
Measurement Point	Pin $\textcircled{1}$ and $\textcircled{2}$ of C9001
Specified Value	4.0 V $\pm$ 0.1 Vdc
10-1.0V check	
Measurement Point	Pin $\textcircled{1}$ of C9001
Specified Value	1.0 V $\pm$ 0.1 Vdc
100V check	
Measurement Point	Pin $\textcircled{1}$ and $\textcircled{2}$ of C9001
Specified Value	1.0 V $\pm$ 0.1 Vdc
100-1V check	
Measurement Point	Pin $\textcircled{1}$ of C9001
Specified Value	1.0 V $\pm$ 0.1 Vdc
100-0.1V check	
Measurement Point	Pin $\textcircled{1}$ of C9001
Specified Value	0.1 V $\pm$ 0.01 Vdc
100-1V check	
Measurement Point	Pin $\textcircled{1}$ , $\textcircled{2}$ and $\textcircled{3}$ of C9001
Specified Value	0.0 V $\pm$ 0.1 Vdc

## 3-5. SYSTEM CONTROL SYSTEM ADJUSTMENTS

### 1. Page 0 Initial Value Input

If the page 0 data type from actual data is none read, input the page 0 initial value before performing adjustments. The details on the initial value, refer to "Page 0 address list" in "3-1-5. Service mode".

Mode	S.S.
Signal	Arbitrary
Adjustment Page	0
Adjustment Address	02 to 05, 0C to 0D, 0F to 0F

[ ] : CDD/TEST/TEST

Input method:

- Page 1, address 05, data 01
- Select page 0, and input the initial value to each address.  
(After setting the data (initial value), be sure to press the F4/CDD button of the adjusting remote commander before changing the address.)



## 2. Battery End Adjustment

Set the battery end voltage.

If the voltage is incorrect, the life of the battery will shorten.

The image at the battery end will also be rough.

Mode	Camera record
Signal	Arbitrary
Measurement Point	LCD display of the adjusting remote control unit
Measuring Instrument	
Adjustment Page	D
Specified Value	06 (BATT END) 07 (BATT PRE-END) 08 (BATT LOW) 09 (BATT MIDDLE) 0A (BATT HIGH)

Connection:

- 1) Connect the regulated power supply and the digital voltmeter as shown in Fig. 7-3-5.

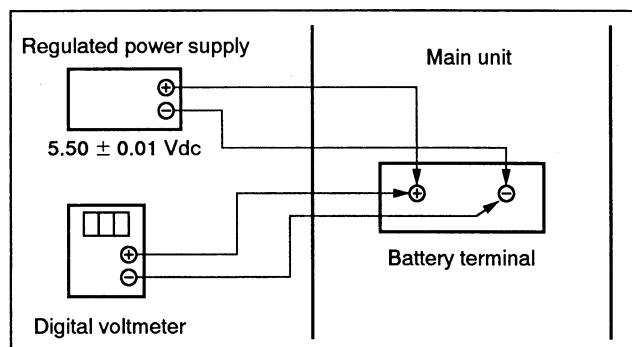


Fig. 7-3-5.

Adjusting method:

- 1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is  $6.3 \pm 0.1 \text{ Vdc}$ .
- 2) Page: 1, address: 00, data: 01
- 3) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is  $5.50 \pm 0.01 \text{ Vdc}$ .
- 4) Set data: 01 to page: 2, address: 00.  
(Specification of category 01)
- 5) Select page: 2, address: 47, read the adjusting remote commander display data, and set to D6.
- 6) Set data D6 to page: D, address: 06, and press the PAUSE button of the adjusting remote commander.
- 7) Convert D47 to decimal notation, and obtain D47'. (Refer to Table 7-1-4. "Hexadecimal notation-decimal notation conversion table")
- 8) Calculate D7', D8', D9' and DA' using following equations (decimal notation calculation).  

$$D7' = D47' + 3$$

$$D8' = D47' + 8$$

$$D9' = D47' + 14$$

$$DA' = D47' + 18$$
- 9) Convert D7', D8', D9' and DA' to hexadecimal notation, and obtain D7, D8, D9 and DA.
- 10) Set data: D7' to page: D, address: 07, and press the PAUSE button of the adjusting remote commander.
- 11) Set data: D8' to page: D, address: 08, and press the PAUSE button.
- 12) Set data: D9' to page: D, address: 09, and press the PAUSE button.
- 13) Set data: DA to page: D, address: 0A, and press the PAUSE button.
- 14) Perform "Battery Down Check".

## B. Battery Level Adjustment

Service battery-cell voltage.

If the voltage is increased, the life of the battery will shorten.

The charge of the battery will also be rough.

Mode	Current screen
Signal	Ambient
Measurement Point	LCD display of the adjusting minute current value
Measuring Instrument	
Adjustment Page	01
Specified Value	00 (SWTT 000V) 01 (SWTT 000.00V) 00 (SWTT 0.00V) 00 (SWTT 0000.0V) 0A (SWTT 0000)

Connecting

- Connect the regulated power supply and the digital voltmeter as shown in Fig. 7-4-5.



Fig. 7-4-5

Adjusting method

- Adjust the output voltage of the regulated power supply so that the digital voltmeter displays  $4.5 \pm 0.1$  Vdc.
- Press  $\square$ , address 00, data 00.
- Decrease the output voltage of the regulated power supply so that the digital voltmeter displays  $4.50 \pm 0.01$  Vdc (Specification of category 00).
- Set item 01 to page 0, address 00.
- Select page 0, address 47, and the adjusting screen overcomes displaying data, and set to 00.
- Set data 00 to page 0, address 00, and press the F4(YES) button of the adjusting screen command.
- Convert 00 to decimal notation, and obtain 00'. (Refer to Table 7-3-3, "Decimal/decimal notation conversion table").
- Calculate 00', 00' and 00' using following equation (decimal notation calculation).  

$$00' = 00 \times 10$$

$$00' = 00 \times 10$$

$$00' = 00 \times 10$$
- Convert 00', 00', 00' and 00' to hexadecimal notation, and obtain 00, 00, 00 and 00.
- Set data 00' to page 0, address 00, and press the F4(YES) button of the adjusting screen command.
- Set data 00' to page 0, address 00, and press the F4(YES) button.
- Set data 00' to page 0, address 00, and press the F4(YES) button.
- Set data 00 to page 0, address 00, and press the F4(YES) button.
- Perform "Battery Device Check".

### 3. Battery Down Check

Mode	Camera record
Subject	Arbitrary

#### Connection

- 1) Connect the regulated power supply and the digital voltmeter as shown in Fig. 7-3-5.

#### Checking method:

Remove the adjusting remote commander, and perform the following check. If the check is not satisfied, perform from the beginning again.

- 1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display becomes  $6.3 \pm 0.1$  Vdc.
- 2) Set to the camera recording mode.
- 3) Check that the  $\square$  mark on the EVF (viewfinder) display is not lighted up. (TALLY lamp lights up).
- 4) Decrease the the output voltage of the regulated power supply so that the digital voltmeter display becomes  $5.54 \pm 0.01$  Vdc.
- 5) Check that the  $\square$  mark on the EVF display and the TALLY lamp blinks every second.
- 6) Decrease the the output voltage of the regulated power supply so that the digital voltmeter display becomes  $5.42 \pm 0.01$  Vdc.
- 7) Check that the  $\square$  mark on the EVF display and the TALLY lamp are blinking faster, the VTR stops and the power supply turns off.

### 3-4. SERVO SYSTEM ADJUSTMENTS

#### 1. Switching Position Adjustment (VS board)

Switching timing of video head setting. If deviated in this case causes switching noise or jitter on the played back screen.

Mode	Playback
Signal	Alignment tape: For tracking adjustment (WR5-1NP)
Measurement Point	CH1: Pin ④ of CN101 (RF SWP) CH2: Pin ③ of CN101 (PB RF)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	04 (SW POSITION) (LOW) 05 (SW POSITION) (HIGH)
Specified Value	$t_1 = 0 \pm 10 \mu\text{sec}$

#### Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Set data: 0B to page: D, address: 05.
- 3) Change the data of page: D, address: 05 and minimize "t<sub>1</sub>". (Coarse adjustment)
- 4) Change the data of page: D, address: 04, and adjust so that the switching position (t<sub>1</sub>) becomes the specified value. (Fine adjustment)
- 5) Press the PAUSE button of the adjusting remote commander.

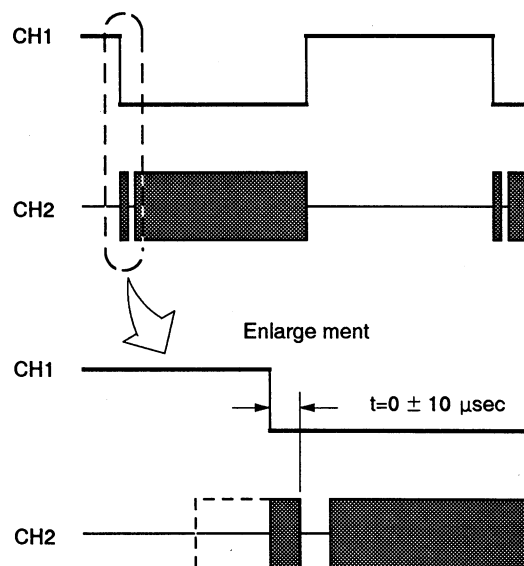


Fig. 7-3-6.

## 3. Battery Down Check

Mode	Feature tested
Signal	Autotune

### Caution

- Connect the regulated power supply and the digital voltmeter as shown in Fig. 7-3-3.

### Checking method

Remove the following remote commander, and perform the following check. If the check is not satisfied, perform from the beginning again.

- Adjust the output voltage of the regulated power supply so that the digital voltmeter display becomes  $5.1 \pm 0.1$  Vdc.
- Turn the remote commander on.
- Check that the OL mark on the PVP (Pilot/Video) display is illuminated up. (TALLY lamp lights up).
- Decrease the output voltage of the regulated power supply so that the digital voltmeter display becomes  $3.4 \pm 0.1$  Vdc.
- Check that the OL mark on the DPO display and the TALLY lamp blink every second.
- Decrease the output voltage of the regulated power supply so that the digital voltmeter display becomes  $3.4 \pm 0.1$  Vdc.
- Check that the OL mark on the DPO display and the TALLY lamp are lighting down, the VHS stop and the power supply goes off.

## 3-4. SERVO SYSTEM ADJUSTMENT

### 1. Servoing Position Adjustment (PH board)

Perform timing of video head setting. If deviation in this run causes erasing video or jitter in the played back video.

Mode	Playback
Signal	Alignment tape: For tracking adjustment (PHD-DPO)
Measurement Point	CH1, PH (G) of CH08 (PH DPO) CH2, PH (G) of CH08 (PH DPO)
Measuring Equipment	Oscilloscope
Adjustment Page	0
Adjustment Address	04 (PH POSITION CLAMP) 06 (PH POSITION) (PHCH)
Specified Value	0-0 ± 10 pins

### Adjusting method

- Page 1, address 02, data 01
- Set data 00 to page 0, address 05.
- Change the data of page 0, address 02 and address 06. (Change address)
- Change the data of page 0, address 04, and adjust so that the recording position (s) becomes the specified value. (Fine adjustment)
- Press the PAUSE button of the recording remote commander.



Fig. 7-3-4.

### 3-5. Standard 8 mm VIDEO SYSTEM ADJUSTMENTS (CCD-TR42/TR70/TR72/TR80/TR82/TR430/TR550)

The adjustments of the video system must be performed according to the following adjustment procedure.

The color video signal supplied from the pattern generator is used as the video input signal for adjusting the video system in recording mode. Check that the sync signal and the color burst signal satisfy the specification specified during the adjustment set-up shown in Figs. 7-3-2. and 7-3-3.

#### [Adjusting procedure]

- 1) Playback frequency characteristics adjustment
- 2) Flying erase check
- 3) VXO oscillation frequency check
- 4) SYNC AGC level adjustment
- 5) Comb filter adjustment
- 6) Emphasis input level adjustment
- 7) WHITE CLIP check
- 8) DARK CLIP check
- 9) DE EMPH level adjustment
- 10) PB Y out level adjustment
- 11) Y FM carrier frequency adjustment
- 12) Y FM deviation adjustment
- 13) Chroma emphasis adjustment 1
- 14) Chroma emphasis adjustment 2
- 15) Comb filter fine adjustment
- 16) REC Y level adjustment
- 17) REC L adjustment
- 18) REC CHROMA level adjustment
- 19) REC ATF level check

#### 1. Playback Frequency Characteristic Adjustment (VS board)

Eliminate the differences in the head characteristics of each channel. If there are differences, flickers and over modulation noises will be produced.

**Note 1:** The adjusting element for CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape: For frequency characteristic adjustment (WR5-6N)
Measurement Point	CH1: Pin ③ of CN102 (PB RF) EXT TRIG: Pin ④ of CN102 (RF SWP)
Measuring Instrument	Oscilloscope TRIG SLOPE: +, [-]
Adjustment Page	D
Adjustment Address	5E (MT 1CH (L)), [63 (MT 2CH (L))]
Specified Value	3.58 MHz level: 5.5 MHz level= 4: (3 ± 0.3)

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) After memorizing the data of page: D, address: 05, set data: 1A.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Change the data of address: 5E [63] of page D, and adjust the level ratio of 3.58 MHz and 5.5 MHz of PB RF output waveform to the specified value.

**Note 2:** After each address adjustment, be sure to press the PAUSE button of the adjusting remote commander and memorize the data.

- 5) Set the data memorized at step 2) to page: D, address: 05, and press the PAUSE button of the adjusting remote commander.

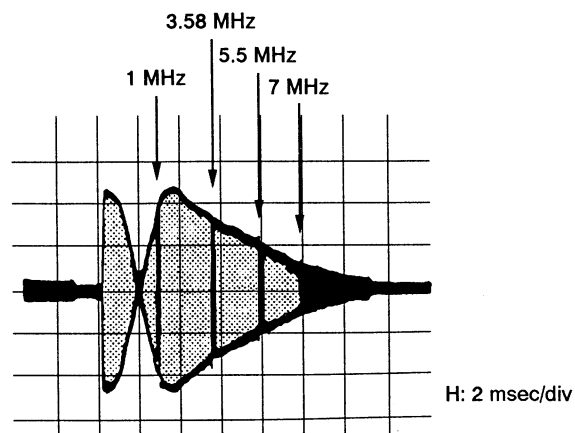


Fig. 7-3-7.

## 3-6. Standard 8 mm VIDEO SYSTEM ADJUSTMENTS (CCIR/BRASIS/PTA/THET/PA/TB/TA/TH/TC/TT/CC/BB/SS)

The adjustments of the video system must be performed according to the following adjustment procedure.

The color video signal supplied from the picture generator is sent as the video input signal for adjusting the video system in ascending order. Check that the test signal and the color burst signal satisfy the specifications specified during the adjustment set-up shown in Figs. 7-1-1 and 7-5-3.

### [Adjusting procedure]

- 1) Playback frequency characteristic adjustment
- 2) Flying start check
- 3) VCR oscillation frequency check
- 4) SYNC AGC level adjustment
- 5) Color filter adjustment
- 6) Composite input level adjustment
- 7) WHITE/CLIP check
- 8) GAIN/CLIP check
- 9) DELGAP level adjustment
- 10) R-Y cut level adjustment
- 11) Y FM carrier frequency adjustment
- 12) Y FM deviation adjustment
- 13) Chroma amplitude adjustment 1
- 14) Chroma amplitude adjustment 2
- 15) Chroma phase adjustment
- 16) SEC-Y level adjustment
- 17) SEC-L adjustment
- 18) SEC CORGAP level adjustment
- 19) SEC A/P level check

### 1. Playback Frequency Characteristic Adjustment (YR locked)

Eliminate the difference in the local discrimination of each channel. If there are differences, picture and color reproduction colors will be poor.

**NOTE 1:** The adjusting channel for (YR) is shown in parentheses ( ).

Menu	Playback
Signal	Alignment tape Pa (frequency characteristic adjustment (YR/LRP))
Measurement Point	CH0: Pa (2+0/CH0) (YR RP) CH1: TR00: Pa (2+0/CH00 (YR TR00))
Measuring Instrument	Oscilloscope TR00: BLOPP: 1, [ ]
Adjustment Page	15
Adjustment Address	30:043 YCR 0.0, 30:047 RCT 1.0
Specified Value	1.00 MHz (each 0.1 MHz level 4 (0.1 MHz)

#### Adjusting method

- 1) Page 1, address (0), data (0)
- 2) After executing the data of page 1, address (0), set data 1.0.
- 3) Press the PAUSE button of the adjusting remote command.
- 4) Change the data of address (0) (0) of page 1, and adjust the level value of 1.00 MHz and 0.1 MHz of PB RP output waveform to the specified value.

**NOTE 2:** After each waveform adjustment, be sure to press the PAUSE button of the adjusting remote command and execute the data.

- 5) Set the data (address) of step 2) to page 1, address (0), and press the PAUSE button of the adjusting remote command.



Fig. 7-4-7.

## 2. Flying Erase Check (VS board)

Mode	Record
Signal	Arbitrary
Measurement Point	Pin ⑫ of CN101 (FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: $8.0 \pm 0.5$ MHz Voltage: $6.0 \pm 1$ Vp-p (ME tape) Above 7.0 Vp-p (MP tape)

Checking method:

- 1) Check that the oscillation frequency and the oscillation voltage satisfies the specified value.

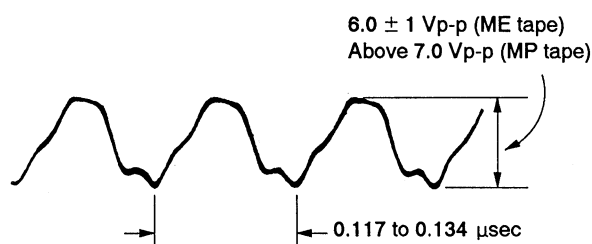


Fig. 7-3-8.

## 3. VXO Oscillation Frequency Check (VS board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑥ of IC201
Measuring Instrument	Frequency counter
Specified Value	$3579545 \pm 50$ Hz

**Note:** Connect the frequency counter via a high impedance (approximately 10 MΩ) and low capacity (below 10 pF) buffer.

Adjusting method:

- 1) Check that the oscillation frequency of pin ⑥ of IC201 is  $3579545 \pm 50$  Hz.

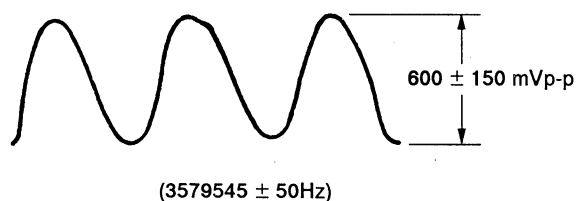


Fig. 7-3-9.

## 4. SYNC AGC Level Adjustment (VS board)

Adjust so that the Y signal level to be recorded becomes consistent. If it is not consistent, the camera EE image and OA image will be brighter or darker than normal.

Mode	Camera record
Signal	Color bar (Camera input) Note 1
Measurement Point	Pin ⑥ of CN201 (VIDEO I/O) Note 2
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	70 (SYNC AGC)
Specified Value	$A=1.00 \pm 0.025V$

**Note 1:** The chroma signal input is not required.

**Note 2:** Terminate the video out terminal at 75Ω .  
75Ω resistor (Part code: 1-247-804-11)

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 70, and adjust so that the Y signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote command-er.

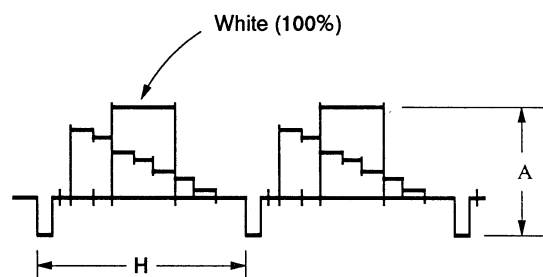


Fig. 7-3-10.

### 3. Flying Bridge Check (VR board)

Mode	Reset
Signal	Arbitrary
Measurement Point	Pin ② of CX001 (P3.02)
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: 0.8 ± 0.1 kHz Voltage: 0.5 ± 1.1 V <sub>pp</sub> (VR board) About 1.0 V <sub>pp</sub> (MP board)

#### Checking method

- Check that the oscillation frequency and the oscillation voltage satisfy the specified value.



Fig. 7-8-8

### 4. VSG Oscillation Frequency Check (VR board)

Mode	Reset
Signal	Arbitrary
Measurement Point	Pin ② of CX001
Measuring Instrument	Frequency counter
Specified Value	1076.60 ± 50 Hz

**Note:** Connect the frequency counter via a high impedance (approximately 10 MΩ) and low capacity (below 20 pF) buffer.

#### Adjusting method

- Check that the oscillation frequency of pin ② of CX001 is 1076.60 ± 50 Hz.



Fig. 7-8-9

### 4. VSG AGC Level Adjustment (VR board)

Adjust so that the Y signal level is the specified level (within constant conditions). If it is not consistent, the correct RB image and OB image will be brighter or darker than normal.

Mode	Camera reset
Signal	Color bar (Camera Input) Plate 1
Measurement Point	Pin ② of CX001 (YVIDEO AGC) Pin ①
Measuring Instrument	Oscilloscope
Adjustment Page	3
Adjustment Address	75 (0750-400)
Specified Value	40 ± 0.5 (40.0%)

**Note 1:** The camera input is not required.

**Note 2:** Transmits the value set manually in VSG, VSG monitor (Unit code: 1 047 604 00).

#### Adjusting method

- Page 1, address 00, data 00
- Change the data of page 03, address 75, and adjust so that the Y signal level (x) becomes the specified value.
- Press the FWD/REV button of the adjusting remote command 40.



Fig. 7-8-10



## 5. Comb Filter Adjustment (VS board)

Set the level and phase of the 1H delayed signal for the comb filter.

Mode	Camera record
Signal	Color bar (Note 1)
Measurement Point	Pin ⑭ of IC201 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 (PHASE)
Adjustment Page	D
Adjustment Address	71 (COMB ADJ)
Specified Value	Residual chroma component (A) is minimum.

**Note 1:** Connect the pattern generator as shown in the following figure.

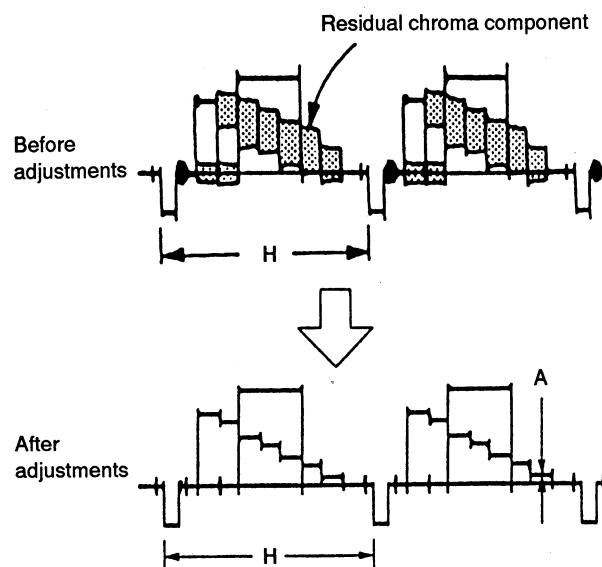
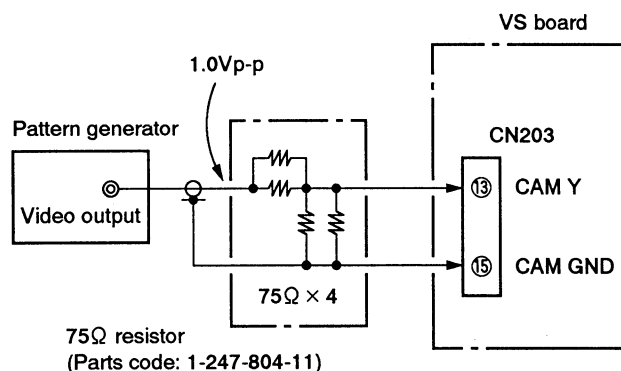


Fig. 7-3-11.

### Adjusting method:

- 1) Set to the VIDEO input mode.
- 2) Set to the record mode.
- 3) Page: 1, address: 00, data: 01
- 4) Set data: 00 to page: 2, address: 00.  
(Specification of category 00)
- 5) Set data: 04 to page: 2, address: B0.
- 6) After memorizing the data of address: 9A of page: 2, set data: 10 to the address. (TEST A mode setting)
- 7) After memorizing the data of address: 9D of page: 2, set data: 30 to the address. (TEST B mode setting)
- 8) Change the data of page: D, address: 71, and adjust the residual chroma component (A) to minimum.
- 9) Adjust RV202 so that the residual chroma component becomes minimum.
- 10) Repeat 8) and 9).
- 11) Press the PAUSE button of the adjusting remote commander.

### Processing after completing adjustments

- 1) Set the data memorized at step 7) to address: 9D of page: 2.
- 2) Set the data memorized at step 6) to address: 9A of page: 2.
- 3) Set data: 00 to page: 2, address: B0.  
(Release of TEST A, B mode)

### 3. Coarse Filter Adjustment (VR board)

Set the level and phase of the test signal to the test setup.

Mode	Coarse reset
Signal	Color bar (Plate 1)
Measurement Point	Pin 5 of IC201 (Y GND-B OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201/VR202
Adjustment Page	0
Adjustment Address	71 (00001400)
Specified Value	Optimal chroma component (A) is minimum.

Note 1) Connect the pattern generator as shown in the following figure.



#### Adjusting method

- 1) Set to the VR/AD input mode.
- 2) Set to the coarse mode.
- 3) Page 1, address 00, data 00.
- 4) Set data 00 to page 1, address 00.  
(Specification of category 00)
- 5) Set data 00 to page 1, address 00.
- 6) After introducing the data of address 0A of page 3, set data 00 to the address (TEXT A mode setting).
- 7) After introducing the data of address 00 of page 3, set data 00 to the address (TEXT B mode setting).
- 8) Change the data of page 3, address 71, and adjust the optimal chroma component (A) to minimum.
- 9) Adjust RV201 so that the optimal chroma component becomes minimum.
- 10) Repeat 6) and 7).
- 11) Press the PAUSE button of the adjusting remote command set.

#### Processing after completing adjustments

- 1) Set the data introduced at step 7) to address 00 of page 2.
- 2) Set the data introduced at step 6) to address 0A of page 2.
- 3) Set data 00 to page 1, address 00.  
(Release of TEXT A, B mode)



Fig. 7-4-1.

## 6. Emphasis Input Level Adjustment (VS board)

Y level of emphasis circuit setting. If deviated, this causes too bright or too dark image during play back after recording.

Mode	Camera record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑤ of IC201 (EMPH IN) or Pin ⑤ of IC205
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	82 (EMPH (EE))
Specified Value	$A=0.50 \pm 0.01V$

**Note 1:** The chroma signal input is not required.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 82, and adjust so that the Y signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

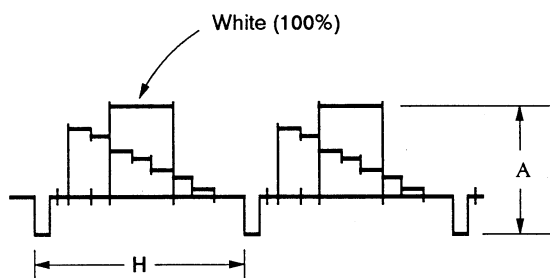


Fig. 7-3-12.

## 7. WHITE CLIP check (VS board)

Mode	Camera record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ③ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	MP tape: 7B (W CLIP (SP L MP)) ME tape: 7A (W CLIP (SP L ME))
Specified Value	$A=220 \pm 10\%$

**Note 1:** The data of address 7B and 7A are fixed value.

(The data of address 7B and 7A are "86".)

**Note 2:** The chroma signal input is not required.

Checking method:

- 1) Set to the record mode.
- 2) Set data: 00 to page: 2, address: 00.  
(Specification of category 00)
- 3) Set data: 04 to page: 2, address: B0.
- 4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address. (TEST 2 mode setting)
- 5) Check that the white clip level (A) satisfies the specified value.

Processing after completing adjustments

- 1) Set the data memorized at step 4) to address: 9A of page: 2.
- 2) Set data: 00 to page: 2, address: B0.  
(Release of TEST 2 mode)

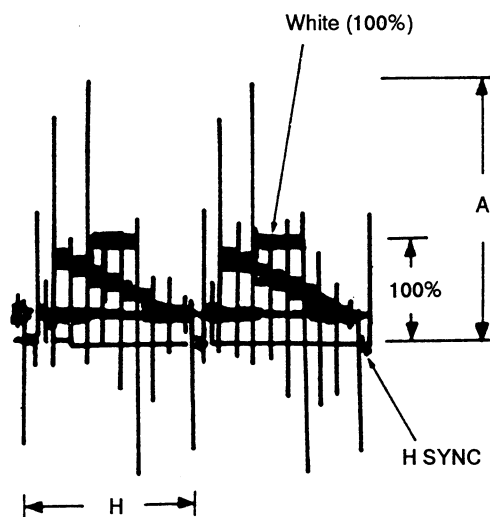


Fig. 7-3-13.

## 6. Highspeed Input Level Adjustment (VB board)

Y level of playback slope setting is defined, this means no height or too high image during play back after recording.

Mode	Channel select
Signal	Color bar (CAMERA input)
Measurement Point	Pin ② of IC201 (204P1-10) or Pin ② of IC202
Measuring instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	81 (204P1/202)
Specified Value	$A-250 \pm 10\%$

Note 1: The chroma signal input is not required.

Adjusting method:

- 1) Page L address (A) data (0)
- 2) Change the data of page 0, address 81, and adjust so that the "Y signal level (V)" becomes the specified value.
- 3) Press the **PAUSE** button of the adjusting remote control.



Fig. 7-6-15

## 7. WHITE CLIP check (VB board)

Mode	Channel select
Signal	Color bar (CAMERA input)
Measurement Point	Pin ② of IC201 (204P1-10) or Pin ② of IC202
Measuring instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	MP input 7B/7C CLIP (204-1 MP) MP input 7A 7B CLIP (204-1 MP)
Specified Value	$A-250 \pm 10\%$

Note 1: The data of address 7B and 7A are fixed value.  
(The data of address 7B and 7A are "MP")

Note 2: The chroma signal input is not required.

Checking method:

- 1) Go to the record mode.
- 2) Set data 00 to page 1, address 00.  
(Operation of memory (0))
- 3) Set data 04 to page 1, address 00.
- 4) After recording the data of address 0A of page 2, set data 01 to the address TEST (1 mode setting).
- 5) Check that the white clip level (A) satisfies the specified value.

Increasing after sampling adjustment

- 1) Set the data recorded at step 4) to address 0A of page 2.
- 2) Set data 00 to page 2, address 0A.  
(Release of TEST 2 mode)



Fig. 7-6-16

## 8. DARK CLIP check (VS board)

Mode	Camera record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ③⑨ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	24 (D CLIP 1) 25 (D CLIP 2)
Specified Value	A=100 ± 10%

**Note 1:** The data of address 24 and 25 are fixed value.  
(The data of address 24 and 25 are "00".)

**Note 2:** The chroma signal input is not required.

**Note 3:** The chroma signal input is not required.

Checking method:

- 1) Set to the record mode.
- 2) Set data: 00 to page: 2, address: 00.  
(Specification of category 00)
- 3) Set data: 04 to page: 2, address: B0.
- 4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address. (TEST 2 mode setting)
- 5) Check that the dark clip level (A) satisfies the specified value.

Processing after completing adjustments

- 1) Set the data memorized at step 4) to address: 9A of page: 2.
- 2) Set data: 00 to page: 2, address: B0.  
(Release of TEST 2 mode)

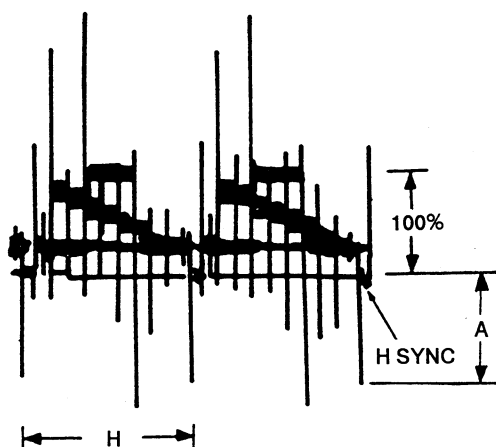


Fig. 7-3-14.

## 9. DE EMPH Level Adjustment (VS board)

De-emphasis input level setting. If deviated, this causes excessive brightness or darkness.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section (WR5-5NSP)
Measurement Point	Pin ②② of IC201 (DL IN 1)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	87 (DE-EMPH (PB L))
Specified Value	A=0.54 ± 0.01V

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 87, and adjust so that the Y signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Perform "PB Y OUT Level Adjustment".

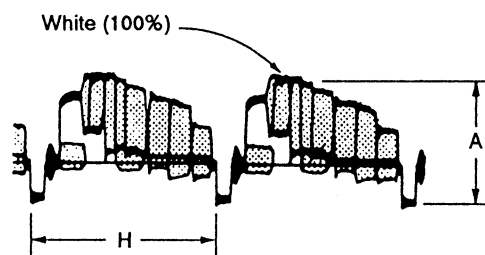


Fig. 7-3-15.

### 8. CMYK CLUT Output (YB mode)

Mode	Camera record
Signal	Color bar (CMYK/RA input)
Measurement Point	Pin ② of KCM (Y 10F OUT)
Measuring Instrument	ColorScope
Adjustment Page	1
Adjustment Address	26 (Y-CLUT Y) 27 (Y-CLUT Y)
Specified Value	A±0.02 to 100

Note 1: The data of address 26 and 27 are fixed values.

(The data of address 26 and 27 are "100".)

Note 2: The chroma signal input is not required.

Note 3: The chroma signal input is not required.

#### Checking method

- Set to the record mode.
- Set data 01 to page 1, address 05.  
(Specification of category 02)
- Set data 01 to page 1, address 05.
- After recording, the data of address 04 of page 1, set data 01 to the address. (TRST 3 mode setting)
- Check that the shut stop level (A) satisfies the specified value.

#### Processing after completing adjustment

- Set the data recorded at step 5) to address 04 of page 1.
- Set data 02 to page 1, address 05.  
(Status of 0001 2 mode)



Fig. 7-9-14.

### 9. CM YBPF Level Adjustment (YB mode)

On-shade input level setting. If disabled, this camera-camera brightness is disabled.

Mode	Playback
Signal	Alignment tape For shooting operation Color bar section (YB/A-B-02P)
Measurement Point	Pin ② of KCM (YB, A-B Y)
Measuring Instrument	ColorScope
Adjustment Page	1
Adjustment Address	01 (YB-YBPF (YB L))
Specified Value	A±0.04 to 100V

#### Adjusting method

- Page 1, address 00, data 01
- Change the data of page 1, address 01, and adjust so that the Y signal level (A) becomes the specified value.
- Press the F4/20 button of the adjusting remote command.
- Perform "YB Y-BPF Level Adjustment".



Fig. 7-9-15.

## 10. PB Y OUT Level Adjustment

PB LINE OUT Y level setting. If deviated, this causes too bright or too dark picture.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Color bar section
Measurement Point	Pin ⑥ of CN201 (VIDEO I/O)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	83 (EMPH (PB))
Specified Value	$A=1.0 \pm 0.05V$

**Note 1:** Terminate the video output/output terminal at  $75\Omega$ .  
75 $\Omega$  resistor (Part code: 1-247-804-11)

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 83, and adjust so that the video signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote command-er.

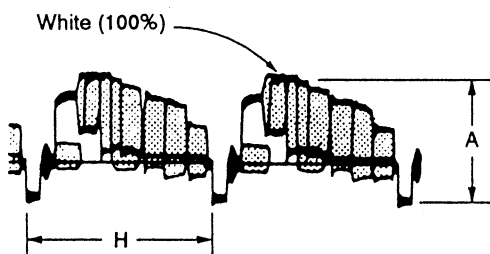


Fig. 7-3-16.

## 11. Y FM Carrier Frequency Adjustment (VS board)

FM carrier frequency of REC Y setting. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	Record
Signal	No signal (CAMERA input)
Measurement Point	Pin ③ of IC201 (Y RF OUT) (JL209)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	75 (CARRIER (L))
Specified Value	$4.385 \pm 0.01 \text{ MHz}$

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 75, and adjust so that the Y FM carrier frequency becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote command-er.



Fig. 7-3-17.

### 18. FM Y GAIN Level Adjustment

FM LNB OUT Y level setting. If disturbed, this causes low height or too dark picture.

Mode	Playback
Signal	Alignment tape For standard speed (4000-5000) Color bar coding
Measurement Point	Pin (B) of CH001 (Y-VIDEO IC)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	02 (0000H/00H)
Specified Value	Amplitude 0.500V

Note 1: The distance to the video input/output terminal of Y00-100 resistor (Part code: 1-347-804-11)

#### Adjusting method:

- 1) Page 1, address 00, data 00
- 2) Change the data of page 0, address 02, and adjust so that the video signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote controller.



Fig. 7-6-16

### 19. Y FM Carrier Frequency Adjustment (FM-Inner)

FM carrier frequency of EPC. Y setting. If disturbed, this causes distorted played back picture or deteriorated reception.

Mode	Search
Signal	No signal (FM-STEREO input)
Measurement Point	Pin (B) of Y000 (Y-IF IC) (Y-VIDEO IC)
Measuring Instrument	Frequency counter
Adjustment Page	0
Adjustment Address	1C (Y0000H/1CH)
Specified Value	4.500 ± 0.01 MHz

#### Adjusting method:

- 1) Page 1, address 00, data 00
- 2) Change the data of page 0, address 1C, and adjust so that the Y FM-carrier frequency becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote-controller.



Fig. 7-6-17



## 12. Y FM Deviation Adjustment (VS board)

FM deviation of REC Y setting. If deviated, this causes too bright/dark image, or marked occurrence of black picture or deteriorated resolution.

Mode	Record and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin ② of IC201 (DL IN 1)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	77 (DEVIATION (L))
Specified Value	$A=0.54 \pm 0.01V$

**Note 1:** Check that "Emphasis Input Level Adjustment", have been completed.

**Note 2:** The chroma signal input is not required.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Record the color bar signal.
- 3) Playback the recorded signal.
- 4) Check the playback signal level (A).  
Specification:  $A=0.54 \pm 0.01V$
- 5) If the specification is not satisfied, change the data of page: D, address: 77, and repeat steps 2) to 4).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When bigger than the specified value	Decrease

- 6) Press the PAUSE button of the adjusting remote command.
- 7) Perform "Y FM Carrier Frequency Adjustment".

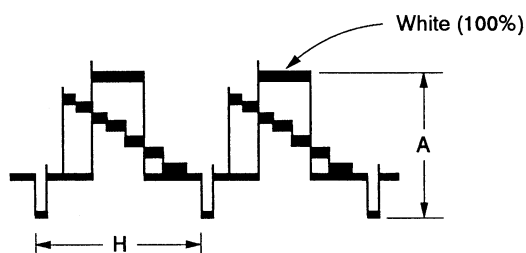


Fig. 7-3-18.

## 13. Chroma Emphasis Adjustment 1 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑧ of IC201 (REC C OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	80 (C EMPH (EE)) 81 (C EMPH (PB))
Specified Value	Minimum fo component

Adjusting method:

- 1) Set to the record mode.
- 2) Page: 1, address: 00, data: 01
- 3) Set data: 00 to page: 2, address: 00.  
(Specification of category 00)
- 4) Set data: 04 to page: 2, address: B0.
- 5) After memorizing the data of address: 9A of page: 2, set data: 02 to the address. (TEST 1 mode setting)
- 6) Change the data of page: D, address: 80, and adjust so that the amplitude of the latter section of the chroma signal (yellow section) becomes minimum.
- 7) Press the PAUSE button of the adjusting remote command.
- 8) Set the same data as address: 80 of page: D to address: 81 of page D.
- 9) Press the PAUSE button of the adjusting remote command.

Processing after completing adjustments

- 1) Set the data memorized at step 5) to address: 9A of page: 2.
- 2) Set data: 00 to page: 2, address: B0.  
(Release of TEST 1 mode)

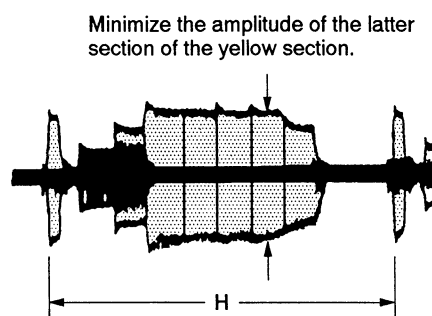


Fig. 7-3-19.

### 18. Y FM Deviation Adjustment (VR board)

Set deviation of VHS Y setting. If deviated, this causes too bright/dark image, or spatial movement of black picture or colorcast resolution.

Mode	Reset and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin 16 of IC201 (X1, H1)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	17 (DEVIATION/17)
Specified Value	Amplitude ± 0.5 V

**Note 1:** Check that "Playback Input Level Adjustment" item has been completed.

**Note 2:** The chroma signal input is not required.

**Adjusting method:**

- 1) Page 1, address 04, data 01
- 2) Record the color bar signal.
- 3) Playback the recorded signal.
- 4) Check the playback signal level (V).  
Specification:  $0.504 \pm 0.007$
- 5) If the specification is not satisfied, change the data of page 1, address 17, and repeat steps 3) to 4).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When larger than the specified value	Decrease

- 6) Press the PAUSE button of the adjusting remote command set.
- 7) Restore "Y FM Carrier Frequency Adjustment".



Fig. 7-2-18

### 19. Chroma Amplitude Adjustment (VR board)

Amplitude center frequency setting. If deviated, this causes resolution color.

Mode	Reset
Signal	Color bar (CAMERA input)
Measurement Point	Pin 16 of IC201 (X1, H1)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	18 (CHC AMP/18) or 19 (CHC FREQ)
Specified Value	Minimum 8 component

**Adjusting method:**

- 1) Set to the reset mode.
- 2) Page 1, address 05, data 01
- 3) Set data 00 to page 1, address 04.  
(Specification of category 00)
- 4) Set data 00 to page 1, address 05.
- 5) After recording the data of address 04 of page 1, set data 02 to the address. (TBS's mode setting)
- 6) Change the data of page 1, address 05, and adjust so that the amplitude of the center portion of the chroma signal (yellow-white) becomes minimum.
- 7) Press the PAUSE button of the adjusting remote command set.
- 8) Set the same data as address 05 of page 0 to address 05 of page 01.
- 9) Press the PAUSE button of the adjusting remote command set.

**Processing after completing adjustments:**

- 1) Set the data mentioned at step 5) to address 04 of page 1.
- 2) Set data 00 to page 1, address 00.  
(Release of TBS's mode)

Minimize the amplitude of the center portion of the yellow-white.



Fig. 7-2-19

#### 14. Chroma Emphasis Adjustment 2 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	D
Adjustment Address	81 (C EMPH (PB)) 80 (C EMPH (EE))
Specified Value	The path from the blue luminance point to black luminance point should be a straight line.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 81, and adjust so that the path from the blue luminance point to black luminance point becomes a straight line.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set the same data as address: 81 of page: D to address: 80 of page: D.
- 5) Press PAUSE button of the adjusting remote commander.

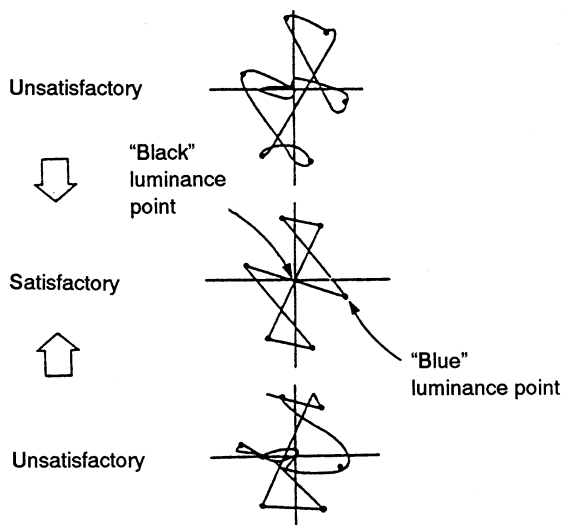


Fig. 7-3-20.

#### 15. Comb Filter Fine Adjustment (VS board)

Set the level and phase of the 1H delayed signal for the comb filter. If deviated, this causes marked occurrence of beets in played back picture.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-5NSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjusting Element	RV202 (PHASE)
Adjustment Page	D
Adjustment Address	71 (COMB ADJ)
Specified Value	Minimum color luminance point movement when the "Edit" switch is turned on/off

**Note 1:** Turn the edit ON/OFF at the menu screen.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Minimize the movements of the color luminance point when the edit is on/off with RV202.
- 3) Change the data of page: D, address: 71 and minimize the movements of the color luminance point when the edit is on/off
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Repeat steps 2) to 4).

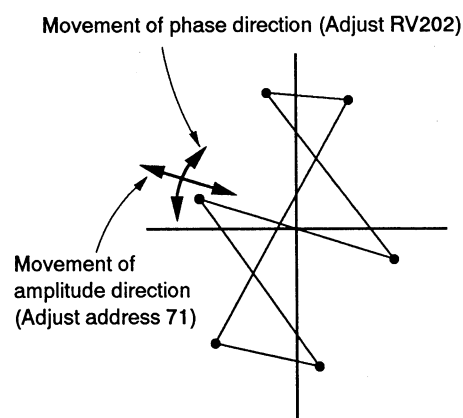


Fig. 7-3-21.

#### 14. Chroma Bandwidth Adjustment (VR board)

Bandwidth center frequency setting. If deviated, the screen becomes white.

Mode	Playback
Signal	Adjustment type: For shooting operations (VIDEO-SDSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Video scope
Adjustment Page	0
Adjustment Address	#1 (C. BAND) (VR) #0 (C. BAND) (SD)
Specify Value	The path from the blue luminance point to black luminance point should be a straight line.

#### Adjusting method

- 1) Page 1, address 00, data 00
- 2) Change the data of page 02, address 11, and adjust so that the path from the blue luminance point to black luminance point becomes a straight line.
- 3) Press the F4 (SD) button of the adjusting remote commander.
- 4) Set the range data in address 01 of page 02 to address 00 of page 01.
- 5) Press F4 (SD) button of the adjusting remote commander.



Fig. 7-4-20

#### 15. Chroma Filter Phase Adjustment (VR board)

Set the level and phase of the CR delayed signal for the main flux. If deviated, the screen marked occurrence of fault is played back again.

Mode	Playback
Signal	Adjustment type: For shooting operations (VIDEO-SDSP) Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Video scope
Adjustment Address	#V200 (HSA-00)
Adjustment Page	0
Adjustment Address	T1 (CUBA-A0)
Specify Value	Mainflux color luminance point movement when the "SUB" switch is turned on/off

Note 1) Turn the sub ON/OFF at the same screen.

#### Adjusting method

- 1) Page 1, address 00, data 00
- 2) Mainflux the movement of the color luminance point when the sub is on/off with FV200.
- 3) Change the data of page 02, address T1 and minimize the movement of the color luminance point when the sub is on/off.
- 4) Press the F4 (SD) button of the adjusting remote commander.
- 5) Repeat steps 2) to 4).



Fig. 7-4-21

## 16. REC Y Level Adjustment (VS board)

Recording level of luminance signal setting. If deviated, this causes black stretch over modulation noise or color shade.

Mode	Record
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope Board width limit: 20 MHz
Adjustment Page	D
Adjustment Address	47 (REC Y 2CH (L MP)) 43 (REC Y 1CH (L MP)) 46 (REC Y 2CH (L ME)) 42 (REC Y 1CH (L ME))
Specified Value	$A=145 \pm 5 \text{ mVp-p}$

**Note 1:** Use a normal MP type tape.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) After memorizing the data of address: 3B of page: D, set data: FF to the address.
- 3) Set data: FF to address: 43 of page: D, and press the PAUSE button of the adjusting remote commander.
- 4) Change the data of page: D, address: 47, and adjust so that REC Y level (A) becomes the specified value.
- 5) Press the PAUSE button of the adjusting remote commander.
- 6) Set data to address: 42, 43, 46 of page: D as shown in following table.

( Be sure to press the PAUSE button of the adjusting remote control unit after setting each data.)

Address	Data
42	Same data as address: 47
43	Same data as address: 47
46	Same data as address: 47

- 7) Set the data memorized at step 2) to address: 3B of page: D and press the PAUSE button of the adjusting remote commander.

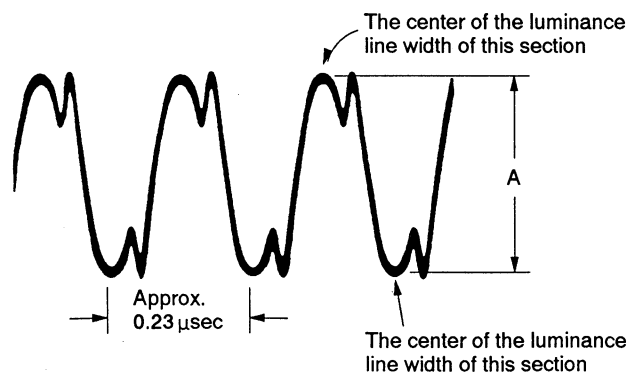


Fig. 7-3-22.

## 17. REC L Adjustment (VS board)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorate, tracking will not be stable, or SP/LP will not be discriminated properly. If too high, color beats will be produced on the self-recording/playback image.

Mode	Record
Signal	No signal (VIDEO input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	3B (REC LOW 2 (MP)) 39 (REC LOW 1 (MP)) 3A (REC LOW 2 (ME)) 38 (REC LOW 1 (ME))
Specified Value	$A=6.7 \pm 1.0 \text{ mVp-p}$

**Note 1:** Use a MP type tape.

**Note 2:** AU board is required for this adjustment.

**Note 3:** For CCD-TR72/TR80/TR430, do not insert any plug into the right audio input terminal.

Connection:

- 1) Connect Emitter of Q113 and GND with a jumper wire.
- 2) Connect Pin ⑤ of IC508 and GND with a 0.01  $\mu\text{F}$  capacitor. (Parts cord: 1-101-004-00)

Adjusting method:

- 1) Page: 1, address: 00, data: 01
  - 2) Change the data of page: D, address: 3B, and adjust so that the REC AFM signal level (A) becomes the specified value.
  - 3) Press the PAUSE button of the adjusting remote commander.
  - 4) Read the data of page: D, address: 3B, and set to D3B.
  - 5) Set data: D3B to address: 39 of page D.
  - 6) Press the PAUSE button of the adjusting remote commander.
  - 7) Convert D3B to decimal notation, and obtain D3B'.
- (Refer to Table 7-1-3. "Hexadecimal notation-decimal notation conversion table")
- 8) Calculate D3A' using following equation (decimal notation calculation).
- $$D3A' = D3B' - 7$$
- 9) Convert D3A' to hexadecimal notation, and obtain D3A.
  - 10) Set data: D3A to address: 3A of page D.
  - 11) Press the PAUSE button of the adjusting remote commander.
  - 12) Set data: D3A to address: 38 of page D.
  - 13) Press the PAUSE button of the adjusting remote commander.
  - 14) Perform "REC CHROMA Level Adjustment".

### 16. SEC Y Level Adjustment (YH Level)

Setting level of luminance signal output. If desired, the same test chart can be used to set color levels.

Mode	Reset
Signal	No signal
Measurement Point	Pin 16 of CH02/SEC Y
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	47 (SEC Y 32A 1.4MP) 48 (SEC Y 32B 1.4MP) 49 (SEC Y 32C 1.4MP) 44 (SEC Y 32A 1.4MP) 45 (SEC Y 32B 1.4MP)
Specified Value	As 40 to 1 on Y-p

Note 1: Use a normal MP-type tape.

#### Adjusting method

- 1) Page 1, address 00, data 00
- 2) After connecting the state of address 38 of page 0, set data FF to the address.
- 3) Set data FF to address 40 of page 0, and press the PALISE button of the adjusting remote commander.
- 4) Change the data of page 0, address 41, and adjust so that SEC Y level (y) becomes the specified value.
- 5) Press the PALISE button of the adjusting remote commander.
- 6) Set data to address 42, 43, 44 of page 0 as shown in following table.

(Be sure to press the PALISE button of the adjusting remote control only after setting each data.)

Address	Data
42	Store data to address 47
43	Store data to address 47
44	Store data to address 47

- 7) Set the data mentioned in step 6) to address 38 of page 0 and press the PALISE button of the adjusting remote commander.

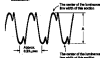


Fig. 7-4-22

### 17. SEC L Adjustment (YH Level)

Set the monitoring level of the SEC-LFM signal and SEC-LFM signal. If the level is too low, the scale 0.5H will deteriorate, making will not be stable, or SMP-L will not be distributed properly. If too high, color levels will be produced on the self-monitoring/feedback image.

Mode	Reset
Signal	No signal (YHSEC input)
Measurement Point	Pin 16 of CH02/SEC L
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	30 (SEC LFM 1.4MP) 31 (SEC LFM 1.4MP) 34 (SEC LFM 1.4MP) 35 (SEC LFM 1.4MP)
Specified Value	As 4.7 to 1.0 Vp-p

Note 1: Use a MP-type tape.

Note 2: A/L level is required for this adjustment.

Note 3: For CH02/CH03/SEC/SEC2, do not insert any plug into the right audio input terminal.

#### Connection

- 1) Connect Section of 02 03 and CH03 with a proper wire.
- 2) Connect Pin 16 of CH02 and CH03 with a 400  $\mu$ F capacitor. (Part code 1-004-004-00)

#### Adjusting method

- 1) Page 1, address 00, data 00
- 2) Change the data of page 0, address 38, and adjust so that the SEC-LFM signal level (y) becomes the specified value.
- 3) Press the PALISE button of the adjusting remote commander.
- 4) Read the data of page 0, address 39, and set to 00.
- 5) Set data 00 to address 38 of page 0.
- 6) Press the PALISE button of the adjusting remote commander.
- 7) Connect Sec to desired section, and obtain Sec.  
(Refer to Table 7-1-1, "Unauthorized section-to-section connection correction table")
- 8) Calculate Sec\* using following equation (section section calculation).  
Sec = (Sec-LFM) / 4
- 9) Connect Sec\* to unauthorized section, and obtain Sec.
- 10) Set data Sec to address 34 of page 0.
- 11) Press the PALISE button of the adjusting remote commander.
- 12) Set data Sec to address 35 of page 0.
- 13) Press the PALISE button of the adjusting remote commander.
- 14) Perform "SEC CHROMA Level Adjustment".

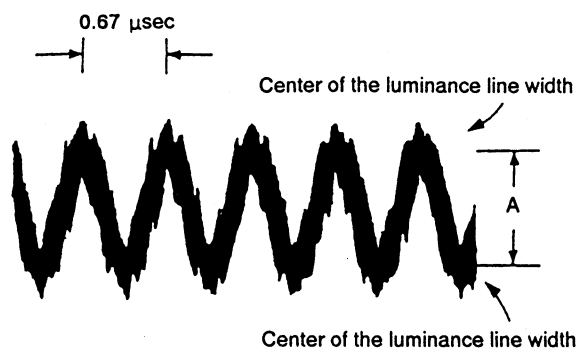


Fig. 7-3-23.

### 18. REC CHROMA Level Adjustment (VS board)

Set REC CHROMA signal level. If it is lower than its normal level, chroma signal noise in played back picture will increase. If it is set higher, Y signal noises will increase and white modulation noises will be produced.

Mode	Record
Signal	Color bar (VIDEO input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	33 (REC C (SP L MP)) 32 (REC C (SP L ME)) 37 (REC C.(LP L MP)) 36 (REC C (LP L ME))
Specified Value	$A=29 \pm 3 \text{ mVp-p}$

**Note 1:** Use a MP type tape.

Connection:

- 1) Connect Emitter of Q113 and GND with a jumper wire.
- 2) Connect Pin ⑤ of IC508 and GND with a  $0.01 \mu\text{F}$  capacitor. (1-101-004-00)
- 3) Disconnect AU board.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 33, and adjust so that the REC CHROMA signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote command-er.
- 4) Read the data of page: D, address: 33, and set to D33.
- 5) Set data: D33 to address: 32 of page D.
- 6) Press the PAUSE button of the adjusting remote command-er.
- 7) Set data: D33 to address: 36 of page D.
- 8) Press the PAUSE button of the adjusting remote command-er.
- 9) Set data: D33 to address: 37 of page D.
- 10) Press the PAUSE button of the adjusting remote command-er.

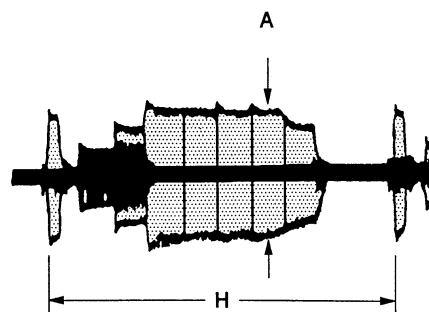


Fig. 7-3-24.



Fig. 7-6-65.

#### 16. RSC CHROMA Level Adjustment (YR board)

Set RSC CHROMA signal level. If it is lower than its normal level, chroma signal noise is played back (picture will increase). If it is set higher, Y signal noise will increase and white noise-like noise will be produced.

Mode	Board
Signal	Color bar (VIDEO input)
Measurement Rate	10 (200/CHROMA (RSC-2))
Measuring instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	33 (RSC-2) (CP L 14FF) 34 (RSC-2) (CP L 14FF) 35 (RSC-2) (CP L 14FF) 36 (RSC-2) (CP L 14FF)
Specified Value	ACH = 3 mV/pp

Note 1: Use a 100-type tape.

#### Connection

- 1) Connect location of Q31.5 and QND with a jumper wire.
- 2) Connect the ② of K205 and QND with a 0.5V  $\mu$ F capacitor.
- 3) Disconnect RSC board.

#### Adjusting method

- 1) Page 1, address 33, type D.
- 2) Change the data of page D, address 33, and adjust so that the RSC CHROMA signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote control.
- 4) Read the data of page D, address 33, and set it to 0e.
- 5) Set data. Data is address 33 of page D.
- 6) Press the PAUSE button of the adjusting remote control.
- 7) Set data. Data is address 34 of page D.
- 8) Press the PAUSE button of the adjusting remote control.
- 9) Set data. Data is address 35 of page D.
- 10) Press the PAUSE button of the adjusting remote control.



Fig. 7-6-66.



### 19. REC ATF Level Check (VS board)

Mode	Record
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Specified Value	$A=6.4 \pm 1.5$ mVp-p

**Note 1:** Use a MP type tape.

Connection:

- 1) Connect Emitter of Q113 and GND with a jumper wire.
- 2) Disconnect AU board.

Adjusting method:

- 1) Check that the REC ATF signal level (A) satisfies the specified value.

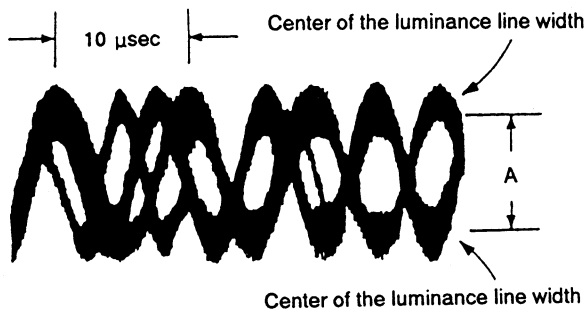


Fig. 7-3-25.

### 3-6. Hi8 VIDEO SYSTEM ADJUSTMENTS (CCD-TR400/TR750)

The adjustments of the video system must be performed according to the following adjustment procedure.

The color video signal supplied from the pattern generator is used as the video input signal for adjusting the video system in recording mode. Check that the sync signal and the color burst signal satisfy the specification specified during the adjustment set-up shown in Figs. 7-3-2. and 7-3-3.

#### [Adjusting procedure]

- 1) Playback frequency characteristics adjustment
- 2) Flying erase check
- 3) VXO oscillation frequency check
- 4) SYNC AGC level adjustment
- 5) Comb filter adjustment
- 6) Emphasis input level adjustment
- 7) WHITE CLIP check
- 8) DARK CLIP check
- 9) DE EMPH level adjustment
- 10) PB Y out level adjustment
- 11) Normal mode Y FM carrier frequency adjustment
- 12) Normal mode Y FM deviation adjustment
- 13) Hi8 mode Y FM carrier frequency adjustment
- 14) Hi8 mode Y FM deviation adjustment
- 15) Chroma emphasis adjustment 1
- 16) Chroma emphasis adjustment 2
- 17) Comb filter fine adjustment
- 18) REC Y level adjustment
- 19) REC L adjustment
- 20) REC CHROMA level adjustment
- 21) REC ATF level check

### 18. SEC ATP Level Check (PB board)

State	Result
Signal	No signal
Measurement Point	Pin 2 of LS90 SEC IC
Measuring Instrument	Oscilloscope
Specified Value	4~4.4 V, 1.5 MHz±5

Note 1: Use MHz type probe.

#### Connections

- ① Connect Pincher of Q1 IC and Q10 IC with a jumper wire.
- ② Disconnect A3 board.

#### Adjusting method

- ① Check that the SEC ATP signal level (V) satisfies the specified value.



Fig. 7-4-45

### 3-4. RB VIDEO SYSTEM ADJUSTMENTS (CDD-TW6070TH00)

The adjustment of the video system must be performed according to the following adjustment procedure.

The video video signal supplied from the picture generator is used as the video input signal for adjusting the video system in monitoring mode. Check that the sync signal and the video base signal satisfy the specifications specified during the adjustment setup shown in Figs. 7-5-1 and 7-5-2.

#### [Adjusting procedure]

- ① Playback frequency-characteristic adjustment
- ② Flying scan check
- ③ YCC correlation frequency check
- ④ STPC AGC level adjustment
- ⑤ Color filter adjustment
- ⑥ Brightness level level adjustment
- ⑦ WBTR/CLP check
- ⑧ GABK CLP check
- ⑨ DS/DMPS level adjustment
- ⑩ PB Y cut level adjustment
- ⑪ Normal mode YFM center frequency adjustment
- ⑫ Normal mode YFM deviation adjustment
- ⑬ SR mode Y FM center frequency adjustment
- ⑭ SR mode Y FM deviation adjustment
- ⑮ Chroma phase adjustment 1
- ⑯ Chroma phase adjustment 2
- ⑰ Color blue hue adjustment
- ⑱ SEC Y level adjustment
- ⑲ SEC L adjustment
- ⑳ SEC CHROMA level adjustment
- ㉑ SEC ATP level check

## 1. Playback Frequency Characteristic Adjustment (VS board)

Eliminate the differences in the head characteristics of each channel. If there are differences, flickers and over modulation noises will be produced.

**Note 1:** The adjusting element for CH2 is shown in parentheses [ ].

Mode	Playback
Signal	Alignment tape: For frequency characteristic adjustment (WR5-7NE)
Measurement Point	CH1: Pin ③ of CN102 (PB RF) EXT TRIG: Pin ④ of CN102 (RF SWP)
Measuring Instrument	Oscilloscope TRIG SLOPE: +, [-]
Adjustment Page	D
Adjustment Address	5A (MT 1CH (SP E ME)) 5B (MT 1CH (SP E MP)) 5C (MT 1CH (LP E ME)) 5D (MT 1CH (LP E MP)) 5E (MT 1CH (L)) [5F (MT 2CH (SP E ME))] 60 (MT 2CH (SP E MP)) 61 (MT 2CH (LP E ME)) 62 (MT 2CH (LP E MP)) [63 (MT 2CH (L))]
Specified Value	4.5 MHz level: 8.5 MHz level= 3: (2 ± 0.2)

Address	Data
5B	D5A
5C	D5A
5D	D5A
5E	D5A+8
60	D5F
61	D5F
62	D5F
63	D5F+8

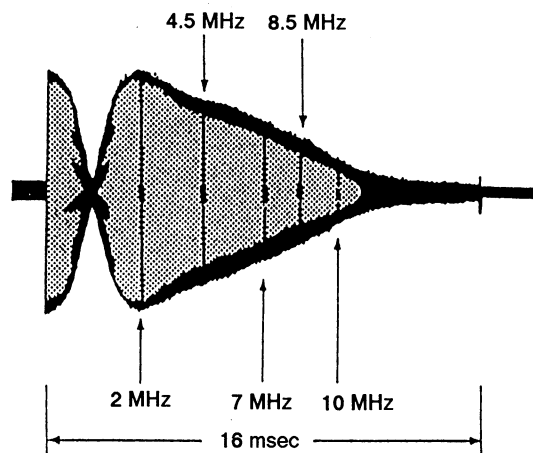


Fig. 7-3-26.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Press the PAUSE button of the adjusting remote commander.
- 3) Change the data of address: 5A [5F] of page D, and adjust the level ratio of 4.5 MHz and 8.5 MHz of PB RF output waveform to the specified value.

**Note 2:** After each address adjustment, be sure to press the PAUSE button of the adjusting remote commander and memorize the data.

- 4) Read the data of page: D, address: 5A, and set to D5A.
- 5) Read the data of page: D, address: 5F, and set to D5F.
- 6) Set data to address: 5B to 5E and 60 to 63 of page: D as shown in following table.  
(Be sure to press the PAUSE button of the adjusting remote commander after setting each data.)

### 5. Playback Frequency Characteristic Adjustment (HF-tuner)

Minimize the difference in the load characteristics of each channel. If there are differences, transmit and own modulation ratios will be produced.

**Note 1:** The adjusting channel for CSI is down in parentheses ( ).

Mode	Playback
Signal	Adjustment type The frequency characteristic adjustment (FREQ-TUN)
Measurement Point	CH1: Pin (B) of CH00 (PB RF) DET TR00: Pin (B) of CH00 (PB RF)
Measuring Instrument	Oscilloscope TDS 30C000+ ( )
Adjustment Page	11
Adjustment Address	3A (DET: 123) (DP: 0.4MHz) 3B (DET: 123) (DP: 0.4MHz) 4C (DET: 123) (LP: 0.4MHz) 3D (DET: 123) (LP: 0.4MHz) 5E (DET: 123) ( ) 3F (DET: 123) (DP: 0.4MHz) 4E (DET: 123) (DP: 0.4MHz) 51 (DET: 123) (LP: 0.4MHz) 52 (DET: 123) (LP: 0.4MHz) 5E (DET: 123) ( )
Specified Value	4.5 MHz level: 0.5 MHz level 5 (2 ~ 6)

Address	Data
3B	Det.
3C	Det.
3D	Det.
3E	Trans.
3F	Det.
4E	Det.
5E	Det.
5E	Cancel



Fig. 7-0-06

Adjusting method:

- 1) Page 1, address (B) data (1)
- 2) Press the F4(SET) button of the adjusting remote commander.
- 3) Change the data of address 3A (B) of page 11 and adjust the level ratio of 4.5 MHz and 0.5 MHz of PB RF output waveform to the specified value.  
**Note 2:** After each address adjustment, be sure to press the F4(SET) button of the adjusting remote commander and memorize the data.
- 4) Read the data of page 11 address 3A, and set to Det.
- 5) Read the data of page 11 address 3E, and set to Det.
- 6) Set data to address 3E to 3E and 4E to 5E of page 11 as shown in following table.  
(Be sure to press the F4(SET) button of the adjusting remote commander after setting each data.)

## 2. Flying Erase Check (VS board)

Mode	Record
Signal	Arbitrary
Measurement Point	Pin ⑫ of CN101 (FE (X))
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: $8.0 \pm 0.5$ MHz Voltage: $6.0 \pm 1$ Vp-p (ME tape) Above 7.0 Vp-p (MP tape)

Checking method:

- 1) Check that the oscillation frequency and the oscillation voltage satisfies the specified value.

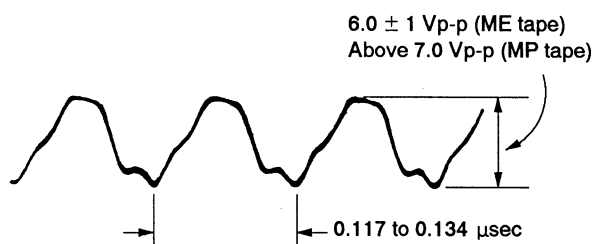


Fig. 7-3-27.

## 3. VXO Oscillation Frequency Check (VS board)

Mode	Record
Signal	Color bar
Measurement Point	Pin ⑥ of IC201
Measuring Instrument	Frequency counter
Specified Value	$3579545 \pm 50$ Hz

**Note:** Connect the frequency counter via a high impedance (approximately  $10\text{ M}\Omega$ ) and low capacity (below  $10\text{ pF}$ ) buffer.

Adjusting method:

- 1) Check that the oscillation frequency of pin ⑥ of IC201 is  $3579545 \pm 50$  Hz.

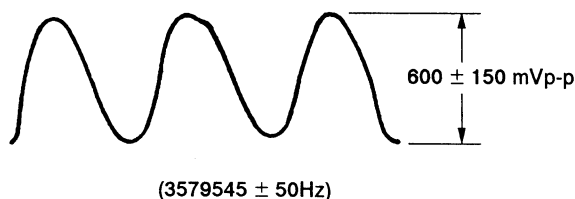


Fig. 7-3-28.

## 4. SYNC AGC Level Adjustment (VS board)

Adjust so that the Y signal level to be recorded becomes consistent. If it is not consistent, the camera EE image and OA image will be brighter or darker than normal.

Mode	Record
Signal	Color bar (Camera input) Note 1
Measurement Point	Pin ② of CN201 (Y IN/OUT) Note 2
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	70 (SYNC AGC)
Specified Value	$A=1.00 \pm 0.025\text{V}$

**Note 1:** The chroma signal input is not required.

**Note 2:** Connect Pin ② of CN201 and Pin ③ of CN201 (S-Y GND) with a  $75\Omega$  resistor.  
 $75\Omega$  resistor (Part code: 1-247-804-11)

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 70, and adjust so that the Y signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

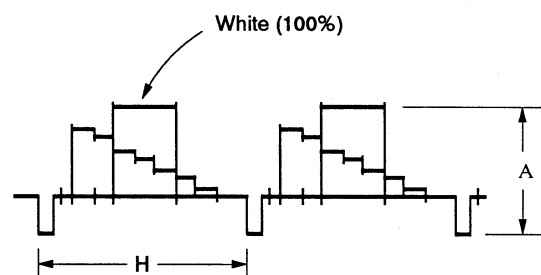


Fig. 7-3-29.

### 3. Flying/Drive Check (VR board)

Mode	Remark
Signal	Arbitrary
Measurement Point	Pin ② of CX301 (VR CG)
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency: 8.0 ± 0.2 MHz Voltage: 0.8 V ± 0.1 V <sub>pp</sub> (all type) Above 10 V <sub>pp</sub> (all type)

Checking method

- Check that the oscillation frequency and the oscillation voltage satisfy the specified value.



Fig. 7-5-27

### 5. VCR Oscillation Frequency Check (VR board)

Mode	Remark
Signal	Color bar
Measurement Point	Pin ② of IC201
Measuring Instrument	Frequency counter
Specified Value	877600 ± 20 Hz

Note: Connect the frequency counter via a high impedance (approximately 10 MΩ) and low capacity (below 10 pF) buffer.

Adjusting method

- Check that the oscillation frequency of pin ② of IC201 is 877600 ± 20 Hz.



Fig. 7-5-28

### 6. D19C100 Level Adjustment (VR board)

Adjust so that the Y signal level is the specified increase amount. If it is not consistent, the current RS image and GS image will be lighter or darker than normal.

Mode	Remark
Signal	Color bar (Current type) from 1
Measurement Point	Pin ② of CX301 (Y IN/OUT/Y) Note 1
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	76 (YIN) (4/2)
Specified Value	761.00 ± 0.05V

Note 1: The current signal level is not required.

Note 2: Connect Pin ② of CX301 and Pin ② of CX301 (Y IN/OUT) with a 75Ω resistor.

75Ω resistor (Part code: 1-047-004-11)

Adjusting method

- Page 1, address 00, item 0.
- Change the data of page 0, address 76, and adjust so that the Y signal level (AC) increases the specified value.
- Press the PAUSE button of the adjusting device repeatedly.



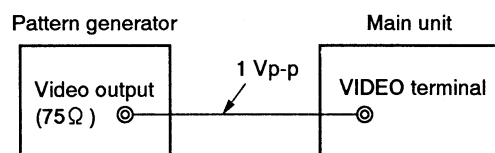
Fig. 7-5-29

## 5. Comb Filter Adjustment (VS board)

Mode	Record
Signal	Color bar (Note 1)
Measurement Point	Pin ⑭ of IC201 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 (PHASE)
Adjustment Page	D
Adjustment Address	71 (COMB ADJ)
Specified Value	Residual chroma component (A) is minimum.

**Note 1:** Connect the pattern generator as shown in the following figure.

**Note 2:** Connect Pin ⑭ of IC251 (INPUT SEL) and Pin ⑨ of IC251 (Vcc) with a jumper wire.



**Note:** The TV monitor cannot be connected.  
Use the view finder to monitor.

Adjusting method:

- 1) Set to the VIDEO input mode.
- 2) Set to the record mode.
- 3) Page: 1, address: 00, data: 01
- 4) Change the data of page: D, address: 71, and adjust the residual chroma component (A) to minimum.
- 5) Adjust RV202 so that the residual chroma component becomes minimum.
- 6) Repeat 4) and 5).
- 7) Press the PAUSE button of the adjusting remote commander.

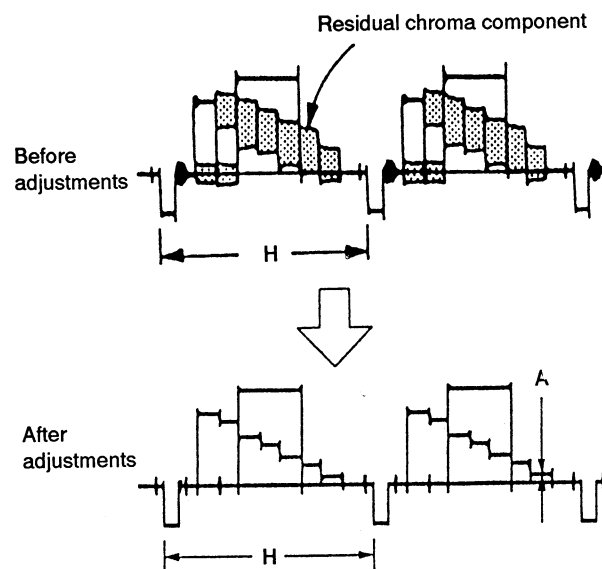


Fig. 7-3-30.

## B. Comb Filter Adjustment (RV Input)

Mode	Service
Signal	Color bar (Site 1)
Measurement Point	Pin ② of IC201 (Y CDS401-OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 (P144M)
Adjustment Page	0
Adjustment Address	T1 CDS401 ADJ
Specified Value	Residual chroma component (RC) is minimum.

Note 1: Choose the pattern generator waveform in the following figure.

Note 2: Connect Pin ② of IC201 (CDS401-OUT) and Pin ② of IC202 (P144) with a jumper wire.



Note: The TV monitor cannot be connected.  
Use the slave monitor's monitor.

### Adjusting method

- 1) Set to the VIDEO input mode.
- 2) Set to the input mode.
- 3) Page 1, address 00, data 01.
- 4) Change the data of page 01, address T1, and adjust the residual chroma component (RC) to minimum.
- 5) Adjust RV202 so that the residual chroma component becomes minimum.
- 6) Repeat 4) and 5).
- 7) Press the F14, R18 button of the adjusting remote command.



Fig. 7-4-30.



## 6. Emphasis Input Level Adjustment (VS board)

Y level of emphasis circuit setting. If deviated, this causes too bright or too dark image during play back after recording.

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑤ of IC201 (EMPH IN) or Pin ⑤ of IC205
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	82 (EMPH (EE))
Specified Value	$A=0.50 \pm 0.01V$

**Note 1:** The chroma signal input is not required.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 82, and adjust so that the Y signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

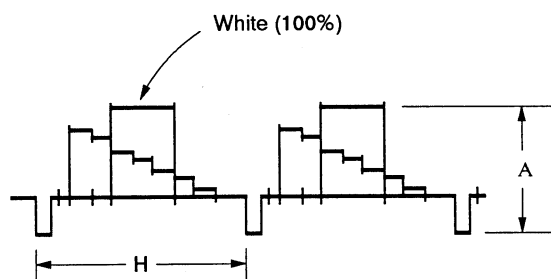


Fig. 7-3-31.

## 7. WHITE CLIP check (VS board)

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ③ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	Hi8 mode ME tape: 78 (W CLIP (SP E ME)) Hi8 mode Hi8 MP tape: 79 (W CLIP (SP E MP)) Normal mode MP tape: 7B (W CLIP (SP L MP))
Specified Value	Hi8 mode ME tape: $A=195 \pm 10\%$ Hi8 mode Hi8 MP tape: $A=190 \pm 10\%$ Normal mode MP tape: $A=220 \pm 10\%$

**Note 1:** The data of address 78 to 7B are fixed value.

Address	Data
78	59
79	53
7A	7B
7B	7B

**Note 2:** The chroma signal input is not required.

Checking method:

- 1) Set to the record mode.
- 2) Set data: 00 to page: 2, address: 00.  
(Specification of category 00)
- 3) Set data: 04 to page: 2, address: B0.
- 4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address. (TEST 2 mode setting)
- 5) Check that the white clip level (A) satisfies the specified value.

Processing after completing adjustments

- 1) Set the data memorized at step 4) to address: 9A of page: 2.
- 2) Set data: 00 to page: 2, address: B0.  
(Release of TEST 2 mode)

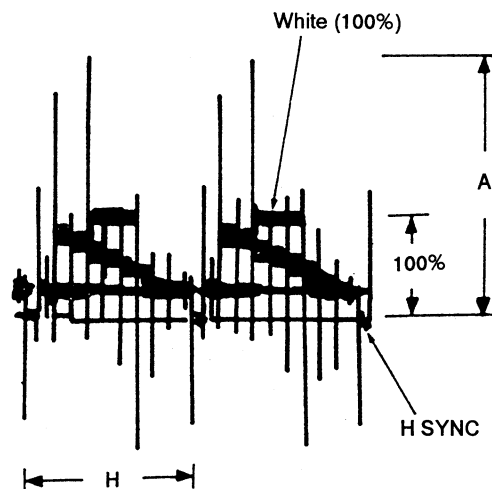


Fig. 7-3-32.

## 6. Synthesizer Input Level Adjustment (VU level)

Y level of amplitude when setting. If distorted, this means too bright or too dark image during play back after recording.

Item	Remark
Signal	Color bar (Y:color, A: audio)
Measurement Point	Pin ② of IC201 (BM7M 04) or Pin ② of IC202
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8E (8E00H (820))
Specified Value	A=0.50 ± 0.05V

Note 1: The ground signal input is not required.

Adjusting method:

- 1) Page 1, address (8) data (8)
- 2) Change the data of page 03, address 8E, and adjust so that the Y signal level (A) becomes the specified value.
- 3) Press the F14,82E button of the adjusting remote command set.



Fig. 7-5-71

## 7. WHITE CLIP level (VU level)

Item	Remark
Signal	Color bar (Y:color, A: audio)
Measurement Point	Pin ② of IC201 (Y: 8E (820))
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	100 mode (00) page 8 (7E CLIP (00 to 00)) 100 mode (00) 8E page 8 (7E CLIP (00 to 00)) Normal mode (00) page 7E (7E (0,0) (00 to 00))
Specified Value	100 mode (00) page 8=0.00 ± 0.05 100 mode (00) 8E page 8=0.00 ± 0.05 Normal mode (00) page 8=0.00 ± 0.05

Note 1: The data of address (8) to (7E) are fixed values.

Address	Data
7E	7E
7D	7D
7A	7A
78	78

Note 2: The ground signal input is not required.

Checking method:

- 1) Set to the normal mode.
- 2) Set data 00 to page 1, address 0A.  
(Specification of category 00)
- 3) Set data 00 to page 1, address 00.
- 4) After terminating the data of address 7A of page 1, set data 01 to the address. (TEST 1 mode setting)
- 5) Check that the white clip level (A) matches the specified value.

Processing after completing adjustments:

- 1) Set the data mentioned at step 1) to address 7A of page 1.
- 2) Set data 00 to page 1, address 00.  
(Release of TEST 1 mode)



Fig. 7-5-72

## 8. DARK CLIP check (VS board)

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ③ of IC201 (Y RF OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	24 (D CLIP 1) 25 (D CLIP 2)
Specified Value	Hi8 mode ME tape: A=85 ± 10% Hi8 mode Hi8 MP tape: A=80 ± 10% Normal mode MP tape: A=100 ± 10%

**Note 1:** The data of address 24 and 25 are fixed value.  
(The data of address 24 and 25 are "00".)

**Note 2:** The chroma signal input is not required.

Checking method:

- 1) Set to the record mode.
- 2) Set data: 00 to page: 2, address: 00.  
(Specification of category 00)
- 3) Set data: 04 to page: 2, address: B0.
- 4) After memorizing the data of address: 9A of page: 2, set data: 01 to the address. (TEST 2 mode setting)
- 5) Check that the dark clip level (A) satisfies the specified value.

Processing after completing adjustments

- 1) Set the data memorized at step 4) to address: 9A of page: 2.
- 2) Set data: 00 to page: 2, address: B0.  
(Release of TEST 2 mode)

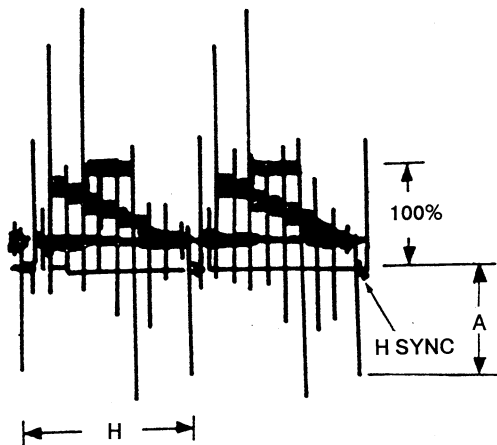


Fig. 7-3-33.

## 9. DE EMPH Level Adjustment (VS board)

De-emphasis input level setting. If deviated, this causes excessive brightness or darkness.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section Normal mode : WR5-5NSP Hi8 mode : WR5-8NSE
Measurement Point	Pin ⑰ of IC201 (DL IN 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	86 (DE-EMPH (PB E)) 87 (DE-EMPH (PB L))
Specified Value	A=0.54 ± 0.01V

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Playback the color bar section of the normal mode alignment tape (WR5-5NSP).
- 3) Change the data of page: D, address: 87, and adjust so that the Y signal level (A) becomes the specified value.
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Playback the color bar section of the Hi8 mode alignment tape (WR5-8NSE).
- 6) Change the data of page: D, address: 86 and adjust so that the Y signal level (A) becomes specified value.
- 7) Press the PAUSE button of the adjusting remote commander.
- 8) Perform "PB Y OUT Level adjustment".

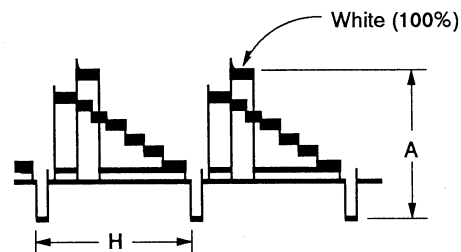


Fig. 7-3-34.

### 8. DARK CLIP LEVEL (YR board)

Mode	Function
Signal	Color bar (ColorBarA input)
Measurement Point	Pin 2 of IC20 (Y SP OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	34 (Y CLIP 1) 35 (Y CLIP 2)
Specified Value	100 mode MP input Adjust 1: 10% 100 mode MB MP input Adjust 1: 10% Normal mode MP input Adjust 1: 10%

**Note 1:** The data of address 34 and 35 are fixed value.  
(The data of address 34 and 35 are "00".)

**Note 2:** The chroma signal input is not required.

#### Checking method:

- 1) Set to the record mode.
- 2) Set data 00 to page 1, address 00.  
(Specification of category 00)
- 3) Set data 04 to page 1, address 00.
- 4) After outputting the data of address 34, of page 1, set data 00 to the address (0007) 2 mode setting.
- 5) Check that the dark clip level (A) achieves the specified value.

#### Measuring after completing adjustments

- 1) Set the data mentioned at step 4) to address 34, of page 1.
- 2) Set data 00 to page 1, address 00.  
(Pattern of YSP 1 2 mode)



Fig. 7-3-25

### 9. 100 MPMB Level Adjustment (YR board)

On multiple input level setting, if to level, this action executes adjustment to before.

Mode	Function
Signal	Adjustment type For checking operation Color bar section Signal mode: YSP-000P MB mode: YSP-000B
Measurement Point	Pin 2 of IC20 (Y CLIP 2)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	34 (YSP-000P/000B) 35 (YSP-000P/000B)
Specified Value	Adjust 1: 0.07V

#### Adjusting method:

- 1) Page 1, address 00, data 00.
- 2) Play back the color bar section of the normal mode alignment tape (YSP-000P).
- 3) Change the data of page 0, address 07, and adjust so that the Y signal level (A) becomes the specified value.
- 4) Press the F1/000 button of the adjusting remote commander.
- 5) Play back the color bar section of the 100 mode alignment tape (YSP-000B).
- 6) Change the data of page 0, address 00 and adjust so that the Y signal level (A) becomes specified value.
- 7) Press the F10/000 button of the adjusting remote commander.
- 8) Perform "100 Y CLIP Level adjustment".



Fig. 7-3-26

### 10. PB Y OUT Level Adjustment (VS board)

PB LINE OUT Y level setting. If deviated, this causes too bright or too dark picture.

Mode	Playback
Signal	Alignment tape: For checking operations (WR5-8NSE) Color bar section
Measurement Point	Pin ② of CN201 (Y IN/OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	83 (EMPH (PB))
Specified Value	A=1.0 ± 0.05V

**Note 1:** Connect Pin ② of CN201 and Pin ③ of CN201 (S-Y GND) with a 75Ω resistor.  
(Part code: 1-247-804-11)

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 83, and adjust so that the video signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote command-er.

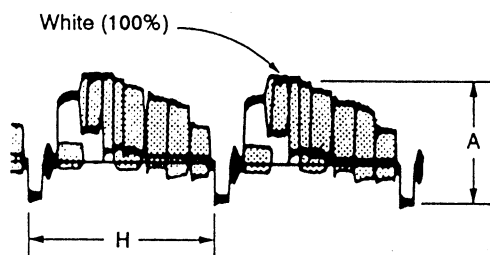


Fig. 7-3-35.

### 11. Normal Mode Y FM Carrier Frequency Adjustment (VS board)

Normal mode FM carrier frequency of REC Y setting. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	Record
Signal	No signal (CAMERA input)
Measurement Point	Pin ③ of IC201 (Y RF OUT)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	75 (CARRIER (L))
Specified Value	4.385 ± 0.01 MHz

Adjusting method:

- 1) Insert a normal MP type tape.
- 2) Page: 1, address: 00, data: 01
- 3) Change the data of page: D, address: 75, and adjust so that the Y FM carrier frequency becomes the specified value.
- 4) Press the PAUSE button of the adjusting remote command-er.

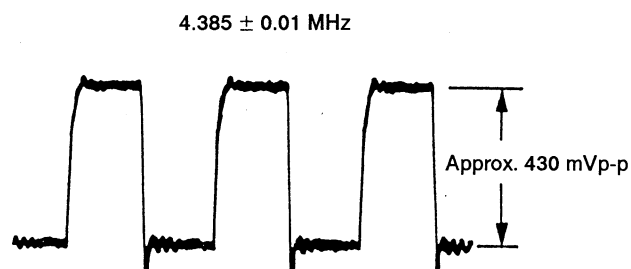


Fig. 7-3-36.

### 10. PB-Y GAIN Level Adjustment (PB Insert)

PB-Y GAIN Y level setting. If incorrect, the screen too bright or too dark picture.

Mode	Playback
Signal	Adjustment tape: For tracking operation (VHS-6000) Color bar series
Measurement Point	Pin ② of CH00 (Y INP01)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	01 (D001) (PB)
Specified Value	4.00 ± 0.05V

**Make 1 :** Connect Pin ② of CH00 and Pin ② of CH00 (B-Y INP0) with 75Ω resistor.  
(For order 1-241-856-1 1)

#### Adjusting method

- Page 1, address 01, data 01
- Change the data of page 01, address 01, and adjust so that the video signal level (V) becomes the specified value.
- Press the F01/00 button of the adjusting remote command.



Fig. 7-9-35

### 11. Normal Mode Y PB Carrier Frequency Adjustment (PB Insert)

Normal mode PB carrier frequency of SEC-Y setting. If incorrect, the screen tilted played back picture or interlaced modulation.

Mode	Normal
Signal	PB signal (CAMERA input)
Measurement Point	Pin ② of 0200 (Y IN 01)
Measuring Instrument	Frequency counter
Adjustment Page	0
Adjustment Address	04 (D004) (Y)
Specified Value	4.500 ± 0.01 MHz

#### Adjusting method

- Insert a correct MP type tape.
- Page 1, address 04, data 01
- Change the data of page 01, address 04, and adjust so that the Y PB carrier frequency becomes the specified value.
- Press the F04/00 button of the adjusting remote command.



Fig. 7-9-36

## 12. Normal Mode Y FM Deviation Adjustment (VS board)

Normal mode FM deviation of REC Y setting. If deviated, this causes too bright/dark image, or marked occurrence of black picture or deteriorated resolution.

Mode	Record and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑩ of IC201 (DL IN 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	77 (DEVIATION (L))
Specified Value	$A=0.54 \pm 0.01V$

**Note 1:** Check that "Emphasis Input Level Adjustment", have been completed.

**Note 2:** The chroma signal input is not required.

Adjusting method:

- 1) Insert a normal MP type tape.
- 2) Page: 1, address: 00, data: 01
- 3) Record the color bar signal.
- 4) Playback the recorded signal.
- 5) Check the playback signal level (A).  
Specification:  $A=0.54 \pm 0.01V$
- 6) If the specification is not satisfied, change the data of page: D, address: 77, and repeat steps 3) to 5).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When bigger than the specified value	Decrease

- 7) Press the PAUSE button of the adjusting remote command-er.
- 8) Perform "Normal Mode Y FM Carrier Frequency Adjustment".

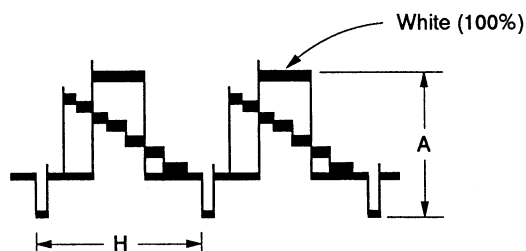


Fig. 7-3-37.

## 13. Hi8 Mode Y FM Carrier Frequency Adjustment (VS board)

Hi8 mode FM carrier frequency of REC Y setting. If deviated, this caused blurred played back picture or deteriorated resolution.

Mode	Record
Signal	No signal (CAMERA input)
Measurement Point	Pin ③ of IC201 (Y RF OUT)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	74 (CARRIER (E))
Specified Value	$6.000 \pm 0.01 \text{ MHz}$

Adjusting method:

- 1) Insert a ME type tape.
- 2) Page: 1, address: 00, data: 01
- 3) Change the data of page: D, address: 74, and adjust so that the Y FM carrier frequency becomes the specified value.
- 4) Press the PAUSE button of the adjusting remote command-er.

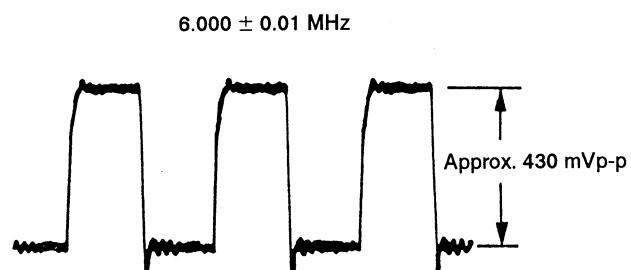


Fig. 7-3-38.

### 12. Normal Mode Y FM Deviation Adjustment (FM board)

Normal mode FM deviation of SEC Y output. If deviated, the center line (highlight image) or marked waveform of black picture or horizontal position.

Mode	Normal and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin ② of IC201 (ELC202)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	HORIZONTAL POSITION (L)
Specified Value	Amplitude ± 50mV

Note 1: Check the "Playback signal level adjustment", have been completed.

Note 2: The device signal input is not required.

#### Adjusting method

- 1) Insert a normal MP type tape.
- 2) Page 1, address 00, data 00.
- 3) Record the color bar signal.
- 4) Playback the recorded signal.
- 5) Check the playback signal level (A).  
Specification:  $(\text{vol}/10) \pm 50\text{mV}$
- 6) If the specification is not satisfied, change the data of page 0, address 7L and repeat steps 3) to 5).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When bigger than the specified value	Decrease

- 7) Press the **PAUSE** button of the adjusting remote control.
- 8) Perform "Normal Mode Y FM Center Frequency adjustment".



Fig. 7-0-27.

### 13. HSB Mode Y FM Center Frequency Adjustment (FM board)

HSB mode FM center frequency of SEC Y output. If deviated, the usual lateral played back picture or horizontal position.

Mode	Normal
Signal	No signal (CAMERA input)
Measurement Point	Pin ② of IC201 (Y OUTPUT)
Measuring Instrument	Frequency counter
Adjustment Page	0
Adjustment Address	FM CENTER FREQUENCY
Specified Value	4,400 ± 0.01 MHz

#### Adjusting method

- 1) Insert a still type tape.
- 2) Page 1, address 00, data 00.
- 3) Change the data of page 0, address 7A, and adjust so that the Y FM center frequency becomes the specified value.
- 4) Press the **PAUSE** button of the adjusting remote control.



Fig. 7-0-28.



#### 14. Hi8 Mode Y FM Deviation Adjustment (VS board)

Hi8 mode FM deviation of REC Y setting. If deviated, this causes too bright/dark image, or marked occurrence of black picture or deteriorated resolution.

Mode	Record and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin ①⑦ of IC201 (DL IN 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	76 (DEVIATION (E))
Specified Value	$A=0.54 \pm 0.01V$

**Note 1:** Check that "Emphasis Input Level Adjustment", have been completed.

**Note 2:** The chroma signal input is not required.

Adjusting method:

- 1) Insert a ME type tape.
- 2) Page: 1, address: 00, data: 01
- 3) Record the color bar signal.
- 4) Playback the recorded signal.
- 5) Check the playback signal level (A).  
Specification:  $A=0.54 \pm 0.01V$
- 6) If the specification is not satisfied, change the data of page: D, address: 76, and repeat steps 3) to 5).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When bigger than the specified value	Decrease

- 7) Press the PAUSE button of the adjusting remote commander.
- 8) Perform "Hi8 Mode Y FM Carrier Frequency Adjustment".

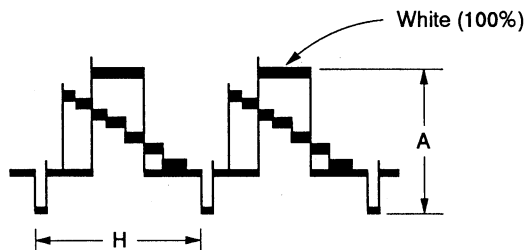


Fig. 7-3-39.

#### 15. Chroma Emphasis Adjustment 1 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑧ of IC201 (REC C OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	80 (C EMPH (EE)) 81 (C EMPH (PB))
Specified Value	Minimum fo component

Adjusting method:

- 1) Set to the record mode.
- 2) Page: 1, address: 00, data: 01
- 3) Set data: 00 to page: 2, address: 00.  
(Specification of category 00)
- 4) Set data: 04 to page: 2, address: B0.
- 5) After memorizing the data of address: 9A of page: 2, set data: 02 to the address. (TEST 1 mode setting)
- 6) Change the data of page: D, address: 80, and adjust so that the amplitude of the latter section of the chroma signal (yellow section) becomes minimum.
- 7) Press the PAUSE button of the adjusting remote commander.
- 8) Set the same data as address: 80 of page: D to address: 81 of page D.
- 9) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

- 1) Set the data memorized at step 5) to address: 9A of page: 2.
- 2) Set data: 00 to page: 2, address: B0.  
(Release of TEST 1 mode)

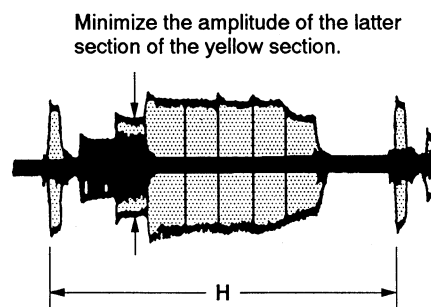


Fig. 7-3-40.

#### 14. HSB Mode Y FM Deviation Adjustment (YH Iscans)

HSB mode FM deviation of SEC Y output. If deviated, this causes the highlight image, or marked contents of black planes or desaturated highlights.

Mode	Access and playback
Signal	Color bar (CAMERA input)
Measurement Point	Pin 26 of IC01 (DA 14 1)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	04 (001A1000/00)
Specified Value	Amplitude is 0.5V

**Note 1:** Check that "Playback Input Level Adjustment", has been completed.

**Note 2:** The chroma signal input is not required.

#### Adjusting method

- Insert a SEC type tape.
- Page 0, address 00, data 00.
- Recess the color bar signal.
- Playback the recorded signal.
- Check the playback signal level (V).  
Specification: 0.50V ± 0.01V
- If the specification is not satisfied, change the data of page 0, address 04, and repeat steps 3) to 5).

Playback signal level	Changing the data
When smaller than the specified value	Increase
When larger than the specified value	Decrease

- Press the PAUSE button of the adjusting remote command.
- Push the "YH Mode Y FM Center Frequency Adjustment".



Fig. 7-3-39

#### 15. Chroma Emphasis Adjustment 1 (YH Iscans)

Emphasis center frequency setting. If deviated, this causes colored color.

Mode	Access
Signal	Color bar (CAMERA input)
Measurement Point	Pin 26 of IC01 (SEC C 0107)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	00 (001A1000/00) 00 (001A1000/00)
Specified Value	Minimum 0 component

#### Adjusting method

- Set to the record mode.
- Page 0, address 00, data 00.
- Set data 00 to page 0, address 00.  
(Definition of category 00)
- Set data 00 to page 0, address 00.
- After connecting the data of address 0A of page 0, set data 00 to the address. (TEST 1 mode setting)
- Change the data of page 0, address 00, and adjust so that the amplitude of the lower section of the chroma signal (yellow section) becomes minimum.
- Press the PAUSE button of the adjusting remote command.
- Set the main data at address 00 of page 0 to address 01 of page 0.
- Press the PAUSE button of the adjusting remote command.

#### Processing after completing adjustments

- Set the data recorded at step 15-0 to address 0A of page 0.
- Set data 00 to page 0, address 00.  
(Release of TEST 1 mode)



Fig. 7-3-40

### 16. Chroma Emphasis Adjustment 2 (VS board)

Emphasis center frequency setting. If deviated, this causes unnatural color.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	D
Adjustment Address	81 (C EMPH (PB)) 80 (C EMPH (EE))
Specified Value	The path from the blue luminance point to black luminance point should be a straight line.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 81, and adjust so that the path from the blue luminance point to black luminance point becomes a straight line.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set the same data as address: 81 of page: D to address: 80 of page: D.
- 5) Press PAUSE button of the adjusting remote commander.

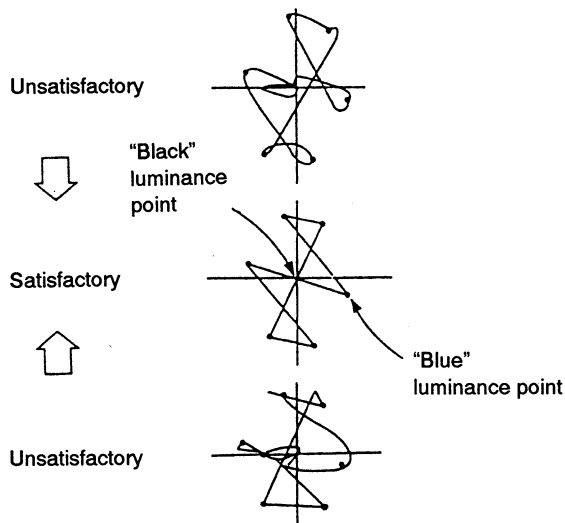


Fig. 7-3-41.

### 17. Comb Filter Fine Adjustment (VS board)

Set the level and phase of the 1H delayed signal for the comb filter. If deviated, this causes marked occurrence of beets in played back picture.

Mode	Playback
Signal	Alignment tape: For checking operations Color bar section
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjusting Element	RV202 (PHASE)
Adjustment Page	D
Adjustment Address	71 (COMB ADJ)
Specified Value	Minimum color luminance point movement when the "Edit" switch is turned on/off

**Note 1:** Turn the edit ON/OFF at the menu screen.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Minimize the movements of the color luminance point when the edit is on/off with RV202.
- 3) Change the data of page: D, address: 71 and minimize the movements of the color luminance point when the edit is on/off
- 4) Press the PAUSE button of the adjusting remote commander.
- 5) Repeat steps 2) to 4).

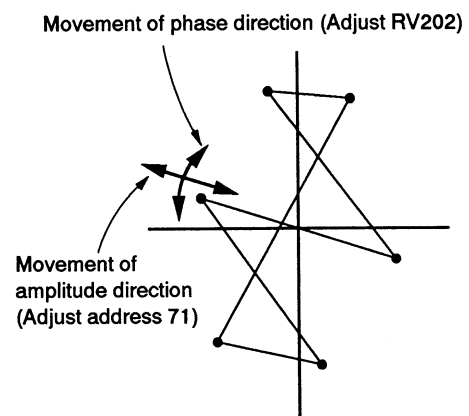


Fig. 7-3-42.

#### 14. Channel Emphasis Adjustment 2 (20 Score)

Emphasis color frequency setting. If activated, this causes constant color.

Mode	Playback
Signal	Alignment tape For checking operations Color bar pattern
Measurement Point	Video output terminal
Measuring Instrument	Video scope
Adjustment Page	D
Adjustment Address	01 (C) 0400 (000) 02 (C) 0400 (000)
Specified Value	The path from the blue luminance point to black luminance point should be a straight line.

##### Adjusting method

- 1) Page 1, address 02, data 00
- 2) Change the data of page 0, address 01, and adjust so that the path from the blue luminance point to black luminance point becomes a straight line.
- 3) Press the FOCUS button of the adjusting remote controller.
- 4) Set the source data to address 01 of page 0 to address 02 of page 0.
- 5) Press the FOCUS button of the adjusting remote controller.



Fig. 7-6-61

#### 15. Speed Phase Fine Adjustment (20 Score)

For the level and phase of the 30 display signal for the comb filter. If activated, this causes marked occurrence of teeth in played back picture.

Mode	Playback
Signal	Alignment tape For checking operations Color bar pattern
Measurement Point	Video output terminal
Measuring Instrument	Video scope
Adjusting Channel	IF/AFS/PM/AFS
Adjustment Page	D
Adjustment Address	70 (C) 0400 (000)
Specified Value	Minimum color luminance point movement when the "30" switch is turned on/off

Note 1: Turn the VCR/CH/FF to the main screen.

##### Adjusting method

- 1) Page 1, address 02, data 00
- 2) Minimize the movement of the color luminance point when the VCR is on/off with VCR.
- 3) Change the data of page 0, address 70 and minimize the movement of the color luminance point when the VCR is on/off
- 4) Press the FOCUS button of the adjusting remote controller.
- 5) Repeat steps 2) to 4).



Fig. 7-6-62

### 18. REC Y Level Adjustment (VS board)

Recording level of luminance signal setting. If deviated, this causes black stretch over modulation noise or color shade.

Mode	Record
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope Board width limit: 20 MHz
Adjustment Page	D
Adjustment Address	44 (REC Y 2CH (E MP)) 40 (REC Y 1CH (E MP)) 45 (REC Y 2CH (E ME)) 41 (REC Y 1CH (E ME)) 47 (REC Y 2CH (L MP)) 43 (REC Y 1CH (L MP)) 46 (REC Y 2CH (L ME)) 42 (REC Y 1CH (L ME))
Specified Value	A=125 ± 5 mVp-p

**Note:** Use a ME type tape.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) After memorizing the data of address: 3A of page: D, set data: FF to the address.
- 3) Set data: FF to page: D, address: 40 and press the PAUSE button of the adjusting remote commander.
- 4) Change the data of page: D, address: 44, and adjust so that REC Y level (A) becomes the specified value.
- 5) Press the PAUSE button of the adjusting remote commander.
- 6) Read the data of page: D, address: 44 and set to D44.
- 7) Convert D44 to decimal notation, and obtain D44'.  
(Refer to Table 7-1-4. "Hexadecimal notation — decimal notation conversion table")
- 8) Calculate D45', D46' and D47' using following equations (decimal notation calculation).  

$$D45' = D44' + 5$$

$$D46' = D44' + 4$$

$$D47' = D44' - 3$$
- 9) Convert D45', D46' and D47' to hexadecimal notation and obtain D45, D46 and D47.
- 10) Set data to address: 40, 41, 42, 43, 45, 46 and 47 of page: D as shown in following table.  
( Be sure to press the PAUSE button of the adjusting remote control unit after setting each data.
- 11) Set the data memorized at step 2) to address: 3A of page: D and press the PAUSE button of the adjusting remote commander.

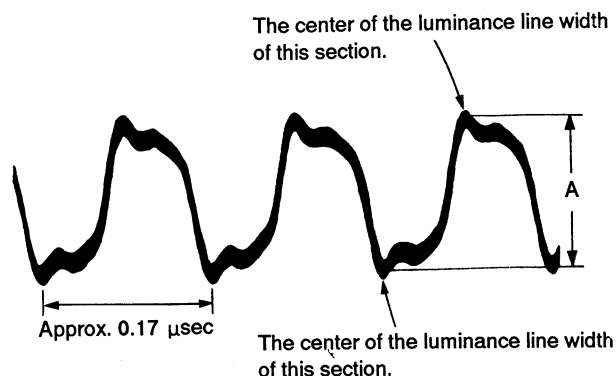


Fig. 7-3-43.

Address	Data
40	D44
41	D45
42	D46
43	D47
45	D45
46	D46
47	D47

#### 14. RSC Y Level Adjustment (RSC board)

Recording level of luminance signal output. If desired, this screen block starts new calibration table as follows:

Mode	Reset
Signal	No signal
Measurement Mode	For [RSC Y] (RSC Y)
Measuring Instrument	Calibrator Board with built-in LED
Adjustment Page	0
Adjustment Address	40 [RSC Y] (RSC Y) (RSC Y) 41 [RSC Y] (RSC Y) (RSC Y) 42 [RSC Y] (RSC Y) (RSC Y) 43 [RSC Y] (RSC Y) (RSC Y) 44 [RSC Y] (RSC Y) (RSC Y) 45 [RSC Y] (RSC Y) (RSC Y) 46 [RSC Y] (RSC Y) (RSC Y) 47 [RSC Y] (RSC Y) (RSC Y)
Specified Value	Adj 28 is 0.0000

Notes: Use a ballpoint pen.

#### Adjusting method

- 1) Page 0, address 00, item 00.
- 2) After assembling the data of address 00, of page 0, on data PP in the address.
- 3) Set data PP to page 0, address 40 and press the F4(ENT) button of the adjusting remote controller.
- 4) Change the data of page 0, address 40, and adjust so that RSC Y level (A) becomes the specified value.
- 5) Press the F4(ENT) button of the adjusting remote controller.
- 6) Repeat the data of page 0, address 40 and set to 0.0.
- 7) Current Data is decimal notation, and write Dec'. (Refer to Table 1-1-4, "Hexadecimal notation = decimal notation conversion table").
- 8) Calculate Dec', Dec' and Dec' using following operations (decimal notation calculation).
 
$$\begin{aligned} \text{Dec}' &= \text{data} \times 0 \\ \text{Dec}' &= \text{data} \times 4 \\ \text{Dec}' &= \text{data} \times 3 \end{aligned}$$
- 9) Current Dec', Dec' and Dec' is hexadecimal notation and write Dec, Dec and Dec.
- 10) Set data to address: 40, 41, 42, 43, 44, 45, 46 and 47 of page 0 equivalent to following table.
 

(Be sure to press the F4(ENT) button of the adjusting remote control unit after setting each data.)
- 11) Set the data mentioned in step 2) to address 00, of page 0 and press the F4(ENT) button of the adjusting remote controller.



Fig. 1-8-45

Address	Data
40	Dec
41	Dec
42	Dec
43	Dec
44	Dec
45	Dec
46	Dec
47	Dec

### 19. REC L Adjustment (VS board)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorate, tracking will not be stable, or SP/LP will not be discriminated properly. If too high, color beats will be produced on the self-recording/playback image.

Mode	Record
Signal	No signal (VIDEO input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	3A (REC LOW 2 (ME)) 38 (REC LOW 1 (ME)) 3B (REC LOW 2 (MP)) 39 (REC LOW 1 (MP))
Specified Value	$A=6.8 \pm 1.0 \text{ mVp-p}$

**Note 1:** Use a ME type tape.

**Note 2:** AU board is required for this adjustment.

**Note 3:** Do not insert any plug into the right audio input terminal.

Connection:

- 1) Disconnect HE-14 board.
- 2) Connect Pin ⑤ of IC508 and GND with a  $0.01 \mu\text{F}$  capacitor.  
(Parts code: 1-101-004-00)

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 3A, and adjust so that the REC AFM signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Read the data of page: D, address: 3A, and set to D3A.
- 5) Set data: D3A to address: 38 of page D.
- 6) Press the PAUSE button of the adjusting remote commander.
- 7) Convert D3A to decimal notation, and obtain D3A'.  
(Refer to Table 7-1-4. "Hexadecimal notation-decimal notation conversion table")
- 8) Calculate D3B' using following equation (decimal notation calculation).  
$$D3B' = D3A' + 10$$
- 9) Convert D3B' to hexadecimal notation, and obtain D3B.
- 10) Set data: D3B to address: 3B of page D.
- 11) Press the PAUSE button of the adjusting remote commander.
- 12) Set data: D3B to address: 39 of page D.
- 13) Press the PAUSE button of the adjusting remote commander.
- 14) Perform "REC CHROMA Level Adjustment".

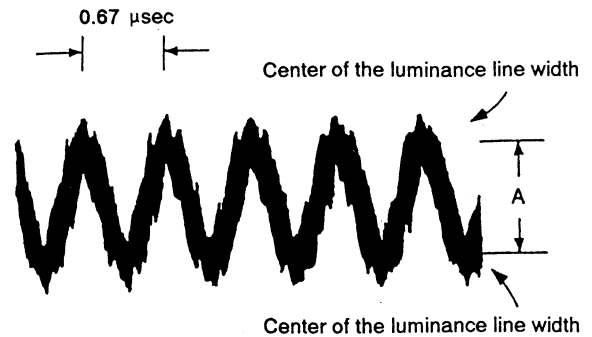


Fig. 7-3-44.

### 7B. HSB L Adjustment (VR board)

For the recording levels of the HSB AFM signal and HSC ATF signal. If the level is too low, the video S/N will deteriorate, tracking will not be stable, or S/P&P will not be distributed properly. If too high, color bars will be produced on the self-recording/playback image.

Mode	Remark
Signal	No signal (VIDEO input)
Measurement Point	Pin 2 of CP&D/HSC 2
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	1A (HSC LOW 0.4MHz) 1B (HSC LOW 1.4MHz) 1C (HSC LOW 2.0MHz) 1D (HSC LOW 3.4MHz)
Specified Value	0.00 ± 0.00Vpp

Note (1) Use a 1MHz type.

Note (2) All boards are required for this adjustment.

Note (3) Do not insert any plug into the right audio input terminal.

### Connections

- Disconnect VR-14 board.
- Connect Pin 2 of CP&D and DVC with a 10k  $\mu$ F capacitor (Pins only 1-100-004-02).

### Adjusting method

- Page 1, address 02, data 02.
- Change the data of page 0, address 1A, and adjust so that the HSB AFM signal level (A) increases the specified value.
- Press the FWD/REV button of the adjusting remote command set.
- Read the data of page 0, address 1A, and set to 00.
- Set data 00 to address 1B of page 0.
- Press the FWD/REV button of the adjusting remote command set.
- Change 00 to desired variation, and obtain Data' (path is "Table 1-1-4, "Horizontal variation-vertical variation conversion table").
- Calculate Data' using following equation (vertical variation calculation).  

$$\text{Data' value} \times 10$$
- Change Data' to broadcast variation, and obtain Data.
- Set data Data to address 1B of page 0.
- Press the FWD/REV button of the adjusting remote command set.
- Set data Data to address 1C of page 0.
- Press the FWD/REV button of the adjusting remote command set.
- Set data "HSC CH&Data Level adjustment".



Fig. 7-2-44



## 20. REC CHROMA Level Adjustment (VS board)

Set REC CHROMA signal level. If it is lower than its normal level, chroma signal noise in played back picture will increase. If it is set higher, Y signal noises will increase and white modulation noises will be produced.

Mode	Record
Signal	Color bar (CAMERA input)
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	30 (REC C (SP E ME)) 31 (REC C (SP E MP)) 32 (REC C (SP L ME)) 33 (REC C (SP L MP)) 34 (REC C (LP E ME)) 35 (REC C (LP E MP)) 36 (REC C (LP L ME)) 37 (REC C (LP L MP))
Specified Value	$A=28 \pm 3 \text{ mVp-p}$

**Note 1:** Use a ME type tape.

Connection:

- 1) Disconnect HE-14 board.
- 2) Connect Pin ⑥ of IC508 and GND with a  $0.01 \mu\text{F}$  capacitor.  
(Parts code: 1-101-004-00)
- 3) Disconnect AU board.

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 30, and adjust so that the REC CHROMA signal level (A) becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Read the data of page: D, address: 30, and set to D30.
- 5) Set data to address: 31 to 37 of page: D as shown in following table.

( Be sure to press the PAUSE button of the adjusting remote commander after setting each data.)

Address	Data
31	D30
32	D30
33	D30
34	D30
35	D30
36	D30
37	D30

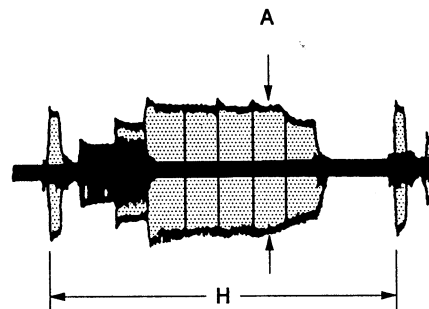


Fig. 7-3-45.

### 36. RSC CHROMA Level Adjustment (V6 board)

for RSC CHROMA signal level, if it is lower than the normal level, screen signal color is played back, picture will become. If it is not higher, Y signal color will increase and white modulation color will be produced.

Item	Remark
Signal	Color bar (AA000A input)
Measurement Point	Pin 5 of (V604 (RSC-C))
Measuring Instrument	Oscilloscope
Adjustment Page	01
Adjustment Address	30 (RSC-C 00P 000P) 31 (RSC-C 00P 000P) 32 (RSC-C 00P 000P) 33 (RSC-C 00P 000P) 34 (RSC-C 00P 000P) 35 (RSC-C 00P 000P) 36 (RSC-C 00P 000P) 37 (RSC-C 00P 000P)
Special Value	Addr + 0x7F

Note 1: Use a 40-type pin.

#### Connection

- 1) Disconnect E0-E4 board.
- 2) Connect Pin5 of V604 and 00P with a 40P of connector (Pin code: 0-00-000-00).
- 3) Disconnect A0 board.

#### Adjusting method

- 1) Page 1, address 00 data 00.
- 2) Change the data of page 01, address 30, and adjust so that the RSC CHROMA signal level (uV) increases the specified value.
- 3) Press the F0000 button of the adjusting remote command set.
- 4) Rewrite the data of page 01, address 30 and set to 00.
- 5) Set data in address 31 to 37 of page 01 as shown in following table.

(Be sure to press the F0000 button of the adjusting remote command set after setting each data.)

Address	Data
30	00
31	00
32	00
33	00
34	00
35	00
36	00
37	00



Fig. T-2-65.

## 21. REC ATF Level Check (VS board)

Mode	Record
Signal	No signal
Measurement Point	Pin ⑥ of CN102 (REC 2)
Measuring Instrument	Oscilloscope
Specified Value	$A=6.6 \pm 1.5 \text{ mVp-p}$

**Note 1:** Use a ME type tape.

Connection:

- 1) Disconnect HE-14 board.
- 2) Disconnect AU board.

Adjusting method:

- 1) Check that the REC ATF signal level (A) satisfies the specified value.

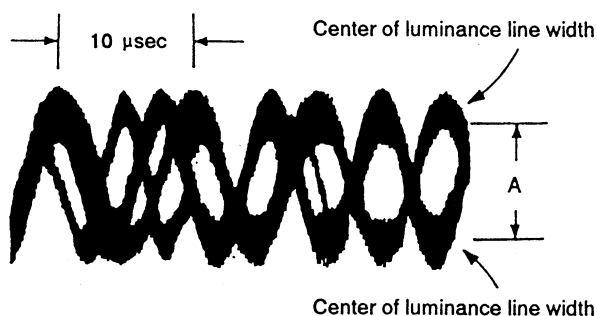


Fig. 7-3-46.

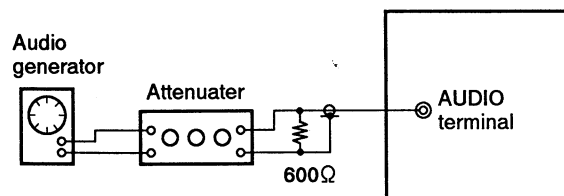
## 3-7. MONAURAL AUDIO SYSTEM ADJUSTMENT (CCD-TR42/TR70/TR82/TR550)

- Perform the adjustment using the color bar signal as a video signal input for VIDEO terminal

### [Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments besides the video system measuring instruments as shown in Fig. 7-3-47, and perform adjustments with the power switch [player] position.

- Connection of Audio generator and attenuator .



- Connection of Audio level meter or distortion meter

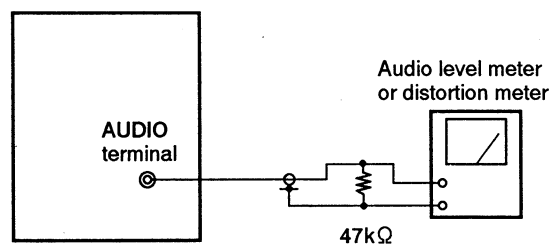


Fig. 7-3-47.

### [Adjustment Procedure]

- 1) E-E output level check
- 2) Deviation adjustment
- 3) Overall level characteristics, distortion check
- 4) Overall noise level check

## 21. RSC APT Level Check (YR Screen)

Mode	Result
Signal	No signal
Measurement Point	Pin ② of CH02 (RSC D)
Measuring Instrument	Oscilloscope
Specified Value	$A=4.5 \pm 1.2 \text{ mV}_{\text{p-p}}$

Note 1) Use a 400 type scope.

### Connection

- 1) Disconnect RSC ④Y lead.
- 2) Disconnect RSC ④Y lead.

### Adjusting method

- 1) Check the the RSC APT signal level (A) whether the specified value.



Fig. 7-3-46.

## 2-2. MONITORIAL AUDIO SYSTEM ADJUSTMENT (CCG-TR42/TCR42/TRA2/TR42B)

- Perform the adjustment using the color bar signal as a video signal input for VCR000000000.

### (Connecting the measuring instruments for the audio)

Connect the audio system measuring instruments besides the video system measuring instruments as shown in Fig. 7-3-47, and perform adjustments with the power switch [play] position.

- Connection of Audio generator and oscilloscope.



- Connection of Audio level meter or distortion meter



Fig. 7-3-47.

### (Adjustment Procedure)

- 1) S-L output level check
- 2) Deviation adjustment
- 3) Overall level/distribution (distortion) check
- 4) Overall noise level check

### 1. E-E Output Level Check (AU-169 board)

Mode	Record
Signal	400 Hz, -7.5 dBs, Audio input terminal
Measurement Point	Pin ④ of IC1301
Measuring Instrument	Audio level meter (Oscilloscope)
Specified Value	$-7.5 \pm 2$ dBs $\left( 925 \begin{smallmatrix} +240 \\ -190 \end{smallmatrix} \text{ mVp-p} \right)$

Checking method:

- 1) Check that the 400 Hz signal level satisfies the specified value.

### 2. Deviation Adjustment

Adjust to the optimum audio FM signal deviation.

If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	Alignment tape: For checking the operation (WR5-5NSP)
Measurement Point	Audio output terminal
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8F (1.5 MHz DEV)
Specified Value	$-7.5 \pm 0.5$ dBs

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 8F, and adjust so that the 400 Hz signal level becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote command.

### 3. Overall Level Characteristic, Distortion Check

Mode	Self recording/playback
Signal	400 Hz, -7.5 dBs, Audio input terminal
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter and distortion meter
Specified Value	Level: $-7.5 \pm 2$ dBs Distortion rate: Below 0.5% (Note 1)

**Note:** 1) Value when the following filter is used

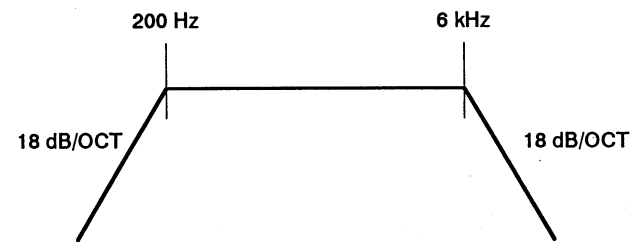


Fig. 7-3-48.

Checking method:

- 1) Input the 400 Hz, -7.5 dBs signal to the audio input terminal.
- 2) Record the signal.
- 3) Remove the input signal.
- 4) Playback the recorded section.
- 5) Check that the 400 Hz signal level of the audio output terminal is  $-7.5 \pm 2$  dBs, and that the distortion rate is below 0.5% (Note 1).

### 4. Overall Noise Level Check

Mode	Self recording
Signal	No signal: Audio input terminal
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter (Use an IHF-A curve auditory correction filter)
Specified Value	Below -65.0 dBs

Checking method:

- 1) Insert the shorting plug to the audio input terminal.
- 2) Record.
- 3) Remove the shorting plug.
- 4) Playback the recorded section.
- 5) Check that the noise level of the audio output terminal is below -65.0 dBs.

### 1. 400 Hz Output Level Check (PMA-100 board)

Mode	Source
Signal	400 Hz, $\pm 1.5$ dB, Audio input terminal
Measurement Point	Pin ⑧ of IC1001
Measuring Instrument	Audio level meter (Oscilloscope)
Specified Value	$-7.5 \pm 2$ dB $\left[ \left( 10 \frac{\text{dBm}}{\text{dB}} \right) \times 0.5 \right]$

#### Checking method

- Check that the 400 Hz signal level satisfies the specified value.

### 2. Distortion Adjustment

Adjusts the optimum audio-IFM signal balance.

If the adjustment is not correct, the playback level will differ from that of other sets.

Mode	Playback
Signal	Alignment tape For checking the operation (WBS-0032)
Measurement Point	Audio output terminal
Measuring Instrument	Oscilloscope
Adjustment Page	②
Adjustment Address	BF (1.1 MHz DMR)
Specified Value	$\pm 1.5 \pm 5.0$ dB

#### Adjusting method

- Page 1, address 02, data 00
- Change the tone of page ②, address BF, and adjust so that the 400 Hz signal level becomes the specified value.
- Press the PMA100 button of the adjusting remote command set.

### 3. Overall Level Characteristics, Distortion Check

Mode	Self-recording/playback
Signal	400 Hz, $\pm 1.5$ dB, Audio input terminal
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter and distortion meter
Specified Value	Level: $-7.5 \pm 2$ dB Distortion rate (below 2.0 kHz): (Value 1)

Note 1) Value when the following filter is used



Fig. 3-9-45

#### Checking method

- Input the 400 Hz,  $\pm 1.5$  dB signal to the audio input terminal.
- Record the signal.
- Reproduce the recorded signal.
- Playback the recorded section.
- Check that the 400 Hz signal level of the audio output terminal is  $-7.5 \pm 2$  dB, and that the distortion rate is below 0.05% (Value 1).

### 4. Overall Noise Level Check

Mode	Self-recording
Signal	No signal: Audio input terminal
Measurement Point	Audio output terminal
Measuring Instrument	Audio level meter (Noise or DNR-A noise coefficient meter) (Noise 1)
Specified Value	Below $-65.0$ dB

#### Checking method

- Insert the recording plug to the audio input terminal.
- Record.
- Reproduce the recording plug.
- Playback the recorded section.
- Check that the noise level of the audio output terminal is below  $-65.0$  dB.

### 3-8. STEREO AUDIO SYSTEM ADJUSTMENT (CCD-TR72/TR80/TR400/TR430/TR750)

- Perform the adjustment using the color bar signal as a video signal input for VIDEO terminal.

#### [Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 7-3-49, and perform adjustments at the power switch [player] or [video] position.

Set the Hi-Fi SOUND switch in the menu display to the following position unless specified otherwise.

- Stereo position

- Note:**
- 1) When inputting the audio signal, input the same signal to both L, and R channels, unless specified otherwise.
  - 2) Be sure to insert the plug (shorting plug or dummy plug, etc.) into the audio terminal (right). If the plug is not inserted, the unit will be set into the monaural mode, and correct adjustments cannot be carried out. (Monaural mode)  
During recording .. REC AFM RF1.7 MHz carrier will not be output.  
During playback .. The L+R signal will be output from the audio terminal (left).
  - 3) The items to be adjusted for the R channel will be indicated within the [ ], in regard to the adjusting items to be adjusted for both L and R channels.

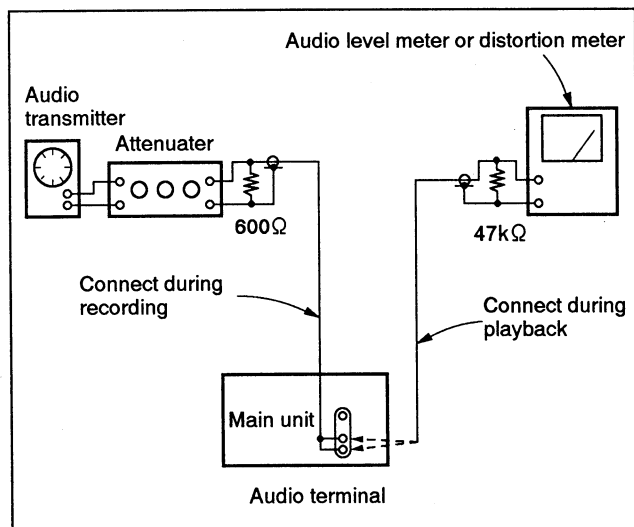


Fig. 7-3-49.

#### [Adjustment Procedure]

- 1) E-E output level check
- 2) REC matrix L-R adjustment
- 3) REC matrix L+R check
- 4) 1.5 MHz deviation adjustment
- 5) 1.7 MHz deviation adjustment
- 6) Overall level characteristics, distortion check
- 7) Separation check
- 8) Overall noise level check

#### 1. E-E Output Level Check (AU-165 board)

Mode	Record
Signal	400 Hz, -7.5 dBs audio input terminal right [left]
Measurement Point	Pin ④ of IC1301 [Pin ⑤ of IC1301]
Measuring Instrument	Oscilloscope
Specified Value	$925^{+240}_{-190}$ mVp-p ( $-7.5 \pm 2$ dBs)

Checking method:

- 1) Check that the 400 Hz signal level satisfies the specified value.

#### 2. Matrix L-R Adjustment (AU-165 board)

Adjust the audio matrix. If improper, this causes deteriorated separation (with stereo signal).

Mode	Record
Signal	400 Hz, -7.5 dBs Input to both left and right terminals of the audio input terminal
Measurement Point	Pin ⑤ of IC1301
Measuring Instrument	Oscilloscope (Use 1:1 probe)
Adjustment Page	D
Adjustment Address	8C (AUDIO MATRIX (EE)) 8D (AUDIO MATRIX (PB))
Specified Value	$0 \pm 20$ mVp-p

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 8C, and minimize the 400 Hz signal level.
- 3) Press the PAUSE button of the adjusting remote commander.
- 4) Set the same data as address: 8C of page: D to address: 8D of page: D.
- 5) Press the PAUSE button of the adjusting remote commander.

### 3.4. STEREO AUDIO SYSTEM ADJUSTMENT

- c.** Perform the adjustment using the value last signed as a "false" amount based on NTP's estimate.

(Connecting the remaining instruments for the audio)  
Connect the video signal receiving instrument to video 1 on the video signal receiving instrument as shown in Fig. 7-2-49 and perform adjustments of the power video player) or (video monitor)

For the 10-11 OCTOBER week in the main display in the following exhibitions you will find information:

- 

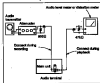
**Warning:** If  $\text{sign}(\text{value})$  is not the same as  $\text{sign}(\text{value}^2)$ , the value is not a number.

- 2) Be sure to insert the plug (choosing plug or channel plug, etc.) last; the media remained (right). If the plug is not inserted, the unit will be not into the connected media, and channel adjustments cannot be carried out.

**Timing recording**—ABC-20400P-2.5 kHz, number will  
and be shown.

**Timing requirements:** The Latch signal will be sampled from the enable inverted clock.

- 2) This item is to be collected for the 10 classes will be collected within the [ ], is equal to the following item is collected for both 1) and 2) items.



1000

[illegible]

- F) Half-angle level check
- G) RMC main L-R adjustment
- H) RMC main L-R check
- I) 1.5 Mils deviation adjustment
- J) 1.7 Mils deviation adjustment
- K) Overall level characteristics, deviation check
- L) Separation check
- M) Overall axis level check

**Abstract** | The purpose of this study was to determine the effect of a 12-week training program on the physical fitness of 10-year-old children. The study was conducted in a primary school in the city of Ankara, Turkey. The children were divided into two groups: a control group and an experimental group. The experimental group participated in a 12-week training program that included aerobic, strength, and flexibility exercises. The control group did not participate in any training program. Physical fitness was measured at the beginning and end of the 12-week period using a series of tests: 1000m run, 50m sprint, 50m shuttle run, sit and reach, and push-up. The results showed that the experimental group had significantly higher scores than the control group in all five tests at the end of the 12-week period. The 1000m run test showed the most significant improvement in the experimental group. The results suggest that a 12-week training program can improve the physical fitness of 10-year-old children.

Mode	Signal
Signal	400 Hz, 1.5-30 Hz audio signal (external input only)
Measurement Value	Pr. (H) of IC200, Pr. (H) of IC201
Measuring Instrument	Oscilloscope
Specified Value	$(100 \pm \frac{+50}{-20}) \sin \theta \pm (1.0 \pm 0.5)\%$

- 1) Check that the +5V pin signal level satisfies the specified value.

**Abstract**

Adjust the valve screw. If necessary, the screw (clockwise) increases the valve opening.

Model	8000A, -13 dB
Signal	Input to both left and right channels of the audio input module
Measurement Point	Pin 10 of IC205
Measuring Instrument	Oscilloscope (100 MHz probe)
Adjustment Page	12
Adjustment Address	00-000000000000 (00) 00-000000000000 (00)
Tested Value	0.1 mVpp

1000

- 1) Page 1, address 04, data 01.
- 2) Change the data of page 1, address 0C, and calculate the CRC 16 signal level.
- 3) Press the **PAUSE** button of the adjoining remote command.
- 4) Set the main data to address 0C of page 0 in address 02 of page 0.
- 5) Press the **PAUSE** button of the adjoining remote command.



### 3. REC Matrix L+R Check (AU-165 board)

Mode	Record
Signal	1. 400 Hz, -7.5 dBs: Audio input terminal left No signal: Audio input terminal right 2. No signal: Audio input terminal left 400 Hz, -7.5 dBs: Audio input terminal right
Measurement Point	Pin ④ of IC1301
Measuring Instrument	Oscilloscope
Specified Value	The level difference is $0 \pm 10$ mVp-p when only the left terminal is input and when only the right terminal is input.

**Note:** When measuring the signal level of pin ④ of IC1301, wait for more than 1 minute after signal input before measuring. (To stabilize the AGC)

Adjusting method:

- 1) Input the 400 Hz, -7.5 dBs signal only to the audio input terminal (left). (Insert the shorting plug to the audio input terminal (right).)
- 2) Read the 400 Hz signal level of pin ④ of IC1301, and take it down. (Approximately 250 mVp-p)
- 3) Input the 400 Hz, -7.5 dBs signal only to the audio input terminal (right). (Insert the shorting plug to the audio input terminal (left).)
- 4) Check that the 400 Hz signal level of pin ④ of IC1301 is (the value that was taken down at step 2)  $\pm 10$  mVp-p.

### 4. 1.5 MHz Deviation Adjustment

Adjusts the 1.5 MHz AFM signal deviation. If improper, this causes deteriorated separation with Alignment tape (with stereo signal) and the playback level will differ from that of other unit.

Mode	Playback
Signal	Alignment tape: For checking the operation (WR5-5NSP)
Measurement Point	Audio output terminal left or right
Measuring Instrument	Oscilloscope, Level meter
Adjustment Page	D
Adjustment Address	8F (1.5 MHz DEV)
Specified Value	$-7.5 \pm 0.5$ dBs

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 8F, and adjust so that the 400 Hz signal level becomes the specified value.
- 3) Press the PAUSE button of the adjusting remote commander.

### 5. 1.7 MHz Deviation Adjustment

Adjust the 1.7 MHz AFM deviation. If improper, this causes deteriorated separation (with stereo signal).

Mode	Playback
Signal	Alignment tape: AFM stereo for checking operation (WR5-9NS) Stereo (color bar) section
Measurement Point	Audio output terminal right
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	8E (1.7 MHz DEV)
Specified Value	Cross talk component is below 30 mVp-p

Adjusting method:

- 1) Page: 1, address: 00, data: 01
- 2) Change the data of page: D, address: 8D, and minimize the cross talk component (400 Hz).
- 3) Press the PAUSE button of the adjusting remote commander.

## 2. 400 Hz Left-Right Channel (400-Hz) Level

Mode	Result
Signal	1. 400 Hz, $\pm 1.2$ dBs Audio input (terminal left) (No signal) Audio input (terminal right) 2. No signal Audio input (terminal left) 400 Hz, $\pm 1.2$ dBs Audio input (terminal right)
Measurement Point	Pin 4 of IC1001
Measuring Instrument	Oscilloscope
Specified Value	The level difference is $0 \pm 1$ dB (0V) or values only the left terminal is input and when only the right terminal is input.

**Notes:** When measuring the signal level of pin 4 of IC1001, wait for more than 1 minute after signal input before measuring. (To minimize the A/D)

### Adjusting method

- Input the 400 Hz,  $\pm 1.2$  dBs signal only to the audio input (terminal left). (Insert the shunting plug to the audio input (terminal right)).
- Read the 400 Hz signal level of pin 4 of IC1001, and set it to zero. (Approximately 0V or 0).
- Input the 400 Hz,  $\pm 1.2$  dBs signal only to the audio input (terminal right). (Insert the shunting plug to the audio input (terminal left)).
- Check that the 400 Hz signal level of pin 4 of IC1001 is (the value that was shown during 2)  $\pm 10$  mV p.p.

## 3. 1.2 MHz Deviation Adjustment

Adjusts the 1.2 MHz mV signal deviation. If improper, this causes distorted separation with alignment tape (with stereo signal) and the playback level will differ from that of other sets.

Mode	Playback
Signal	Alignment tape For checking the operation (FM-0000)
Measurement Point	Audio output (terminal left or right)
Measuring Instrument	Oscilloscope, Level meter
Adjustment Page	0
Adjustment Address	8F (1.2 MHz DIF)
Specified Value	$-1.2 \pm 0.2$ dBs

### Adjusting method

- Page 1, address 00, data 01
- Change the data of page 0, address 8F, and adjust so that the 400 Hz signal level becomes the specified value.
- Press the PAUSE button of the adjusting remote command.

## 4. 1.2 MHz Deviation Adjustment

Adjusts the 1.2 MHz mV signal deviation. If improper, this causes distorted separation (with stereo signal).

Mode	Playback
Signal	Alignment tape a) For checking the operation (FM-0000) b) Stereo (stereo test) section
Measurement Point	Audio output (terminal right)
Measuring Instrument	Oscilloscope
Adjustment Page	0
Adjustment Address	8E (1.2 MHz DIF)
Specified Value	Clear this component is below 30 mV p.p.

### Adjusting method

- Page 1, address 00, data 01
- Change the data of page 0, address 8E, and minimize the zero volt component (400 Hz).
- Press the PAUSE button of the adjusting remote command.

## 6. Overall Level Characteristics, Distortion Check

Mode	Self recording/playback
Signal	400 Hz, -7.5 dBs: Audio input terminal (left) [right] No signal: Audio input terminal (right) [left]
Measurement Point	Audio output terminal (left) [right]
Measuring Instrument	Audio level meter and distortion meter
Specified Value	Level: $-7.5 \pm 2$ dBs Distortion rate: Below 0.8% (Note 2)

- Note:** 1) The [ ] indicates the measuring point during the right channel check.  
2) Value when the 200 kHz to 6 kHz band-path filter is used

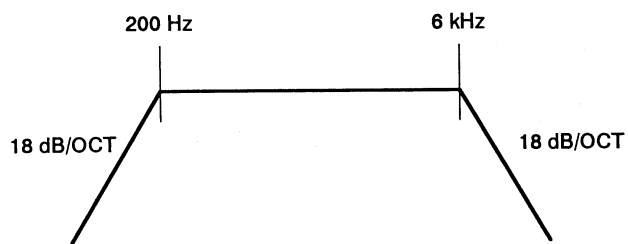


Fig. 7-3-50.

Checking method:

- 1) Input the 400 Hz, -7.5 dBs signal only to the audio input terminal (left) [right].  
**Note:** Be sure to insert the shorting plug to the terminal that was not signal input.
- 2) Record the signal.
- 3) Remove the input signal.
- 4) Playback the recorded section.
- 5) Check that the 400 Hz signal level of the audio output terminal (left) [right] is  $-7.5 \pm 2$  dBs, and that the distortion rate is below 0.8% (Note 2).

## 7. Separation Check

Mode	Self recording /playback
Signal	No signal: Audio input terminal (left) [right] 400 Hz, -7.5 dBs: Audio input terminal (right) [left]
Measurement Point	Audio output terminal (left) [right]
Measuring Instrument	Audio level meter (Use an IHF-A curve auditory correction filter)
Specified Value	Below -27.5 dBs

- Note:** The [ ] indicates the measuring point during the right channel check.

Checking method:

- 1) Insert a shorting plug into the audio input terminal (left) [right], and input a 1kHz, -7.5 dBs signal only to the audio input terminal (right) [left].
- 2) Record the signal.
- 3) Remove the input signal.
- 4) Playback the recorded section.
- 5) Check that the cross talk level (1 kHz) of the audio output terminal (left) [right] is below -27.5 dBs.

## 8. Overall Noise Level Check

Mode	Self recording/playback
Signal	No signal: Audio input terminal left and right
Measurement Point	Audio output terminal (left) [right]
Measuring Instrument	Audio level meter (Use an IHF-A curve auditory correction filter)
Specified Value	Below -62.5 dBs

- Note:** The [ ] indicates the measuring point during the right channel check.

Checking method:

- 1) Insert the shorting plug to both left and right of the audio input terminals.
- 2) Record.
- 3) Remove the shorting plug.
- 4) Playback the recorded section.
- 5) Check that the noise level of the audio output terminal (left) [right] is below -62.5 dBs.

## 6. General Level Characteristic, Distortion Check

Mode	Self monitoring/playback
Signal	400 Hz, -1.5 dBm Audio Input monitored (left) (right) No signal, Audio Input monitored (left) (right)
Measurement Point	Audio output monitored (left) (right)
Monitoring Instrument	Audio level meter and distortion meter
Specified Value	Level: -1.5 $\pm$ 0.5 dB Distortion rate (below 0.05% (Note 2))

Note: 1) The [ ] indicates the monitoring point during the right channel check.

2) Value when the 400 kHz  $\pm$  5 kHz band-pass filter is used



Fig. 7-4-35

### Checking method

- 1) Input the 400 Hz, -1.5 dBm signal only to the audio input monitored (left) (right).

Note: Use care to insert the checking plug to the terminal that was principal input.

- 2) Record the signal.
- 3) Remove the input signal.
- 4) Playback the recorded section.
- 5) Check that the 400 Hz signal level of the audio output monitored (left) (right) is -1.5  $\pm$  0.5 dB, and that the distortion rate is below 0.05% (Note 2).

## 7. Separation Check

Mode	Self monitoring/playback
Signal	No signal, Audio Input monitored (left) (right) 400 Hz, -1.5 dBm Audio Input monitored (left) (right)
Measurement Point	Audio output monitored (left) (right)
Monitoring Instrument	Audio level meter (Use an IEC-A curve ordinary measuring filter)
Specified Value	Below -25.5 dB

Note: The [ ] indicates the monitoring point during the right channel check.

### Checking method

- 1) Insert a checking plug into the audio input monitored (left) (right), and input a 400 Hz, -1.5 dBm signal only to the audio input monitored (right) (left).
- 2) Record the signal.
- 3) Remove the input signal.
- 4) Playback the recorded section.
- 5) Check that the mean dB level (1 kHz) of the audio output monitored (left) (right) is below -25.5 dB.

## 8. General System Level (Check)

Mode	Self monitoring/playback
Signal	Monosignal, Audio Input monitored left and right
Measurement Point	Audio output monitored (left) (right)
Monitoring Instrument	Audio level meter (Use an IEC-A curve ordinary measuring filter)
Specified Value	Below -60.5 dB

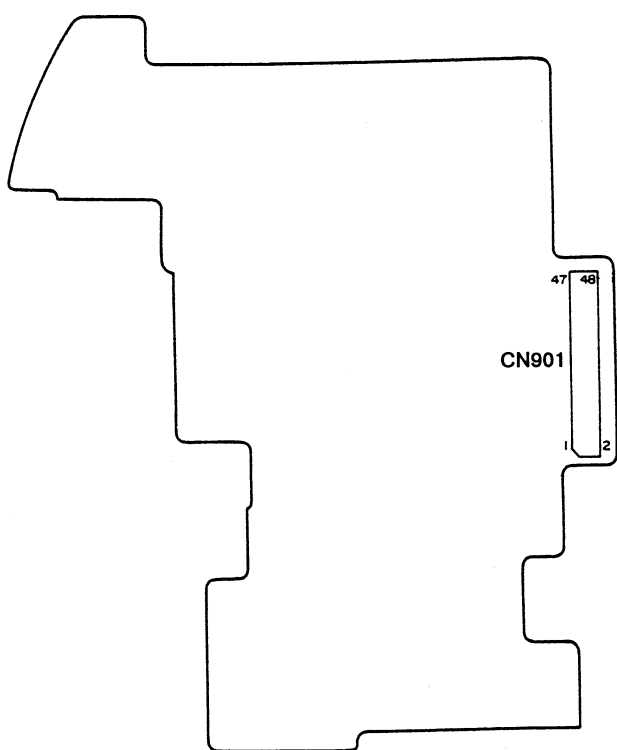
Note: The [ ] indicates the monitoring point during the right channel check.

### Checking method

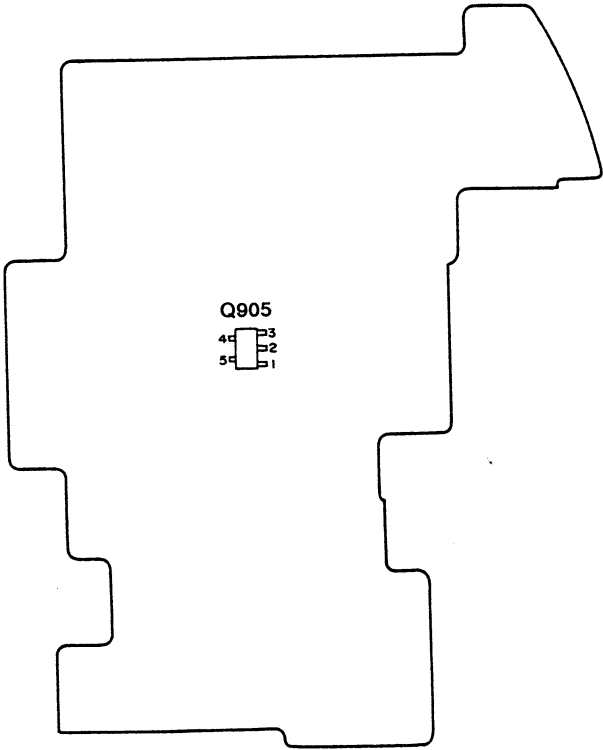
- 1) Insert the checking plug to both left and right of the audio input monitored.
- 2) Record.
- 3) Remove the checking plug.
- 4) Playback the recorded section.
- 5) Check that the audio level of the audio output monitored (left) (right) is below -60.5 dB.

3-9. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

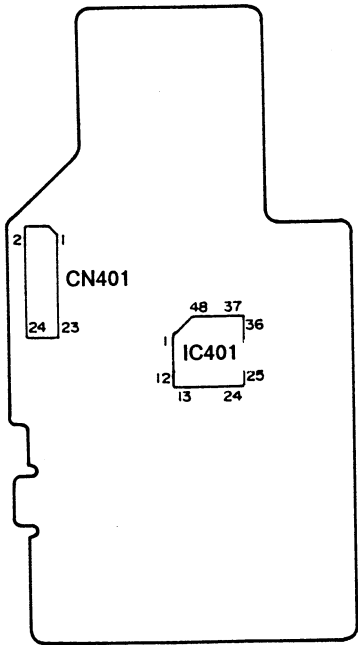
DD BOARD (CONDUCTOR SIDE)



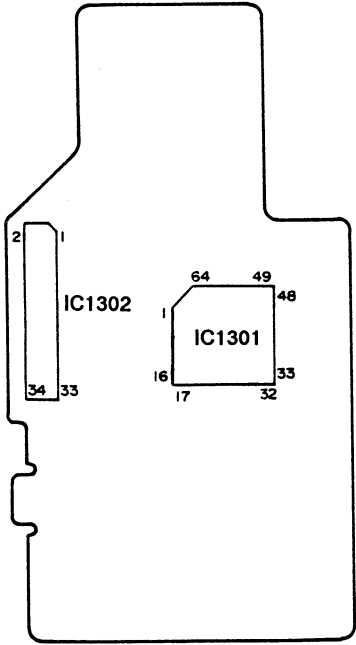
DD BOARD (COMPONENT SIDE)



AU-169 BOARD (COMPONENT SIDE)  
(CCD-TR42/TR70/TR82/TR550)



AU-165 BOARD (COMPONENT SIDE)  
(CCD-TR72/TR80/TR400/TR430/TR750)



## 3.6. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

DD BOARD (CONDUCTION SIDE)



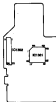
DD BOARD (COMPONENT SIDE)



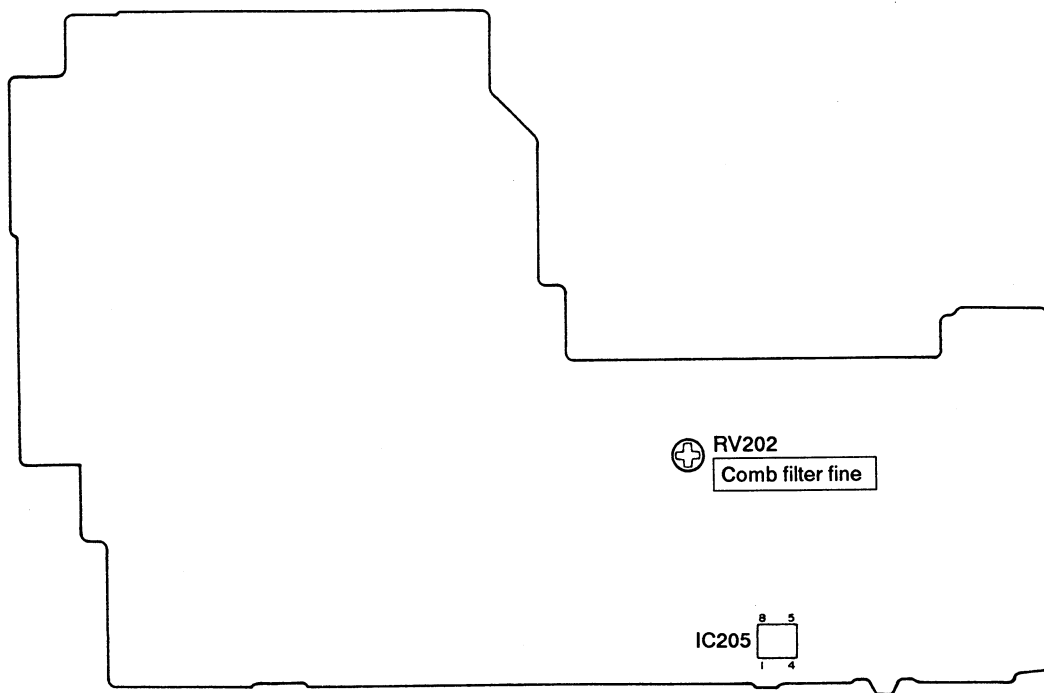
AA-100 BOARD (COMPONENT SIDE)  
(200L-TR45/TR50/TR60/TR65/TR80)



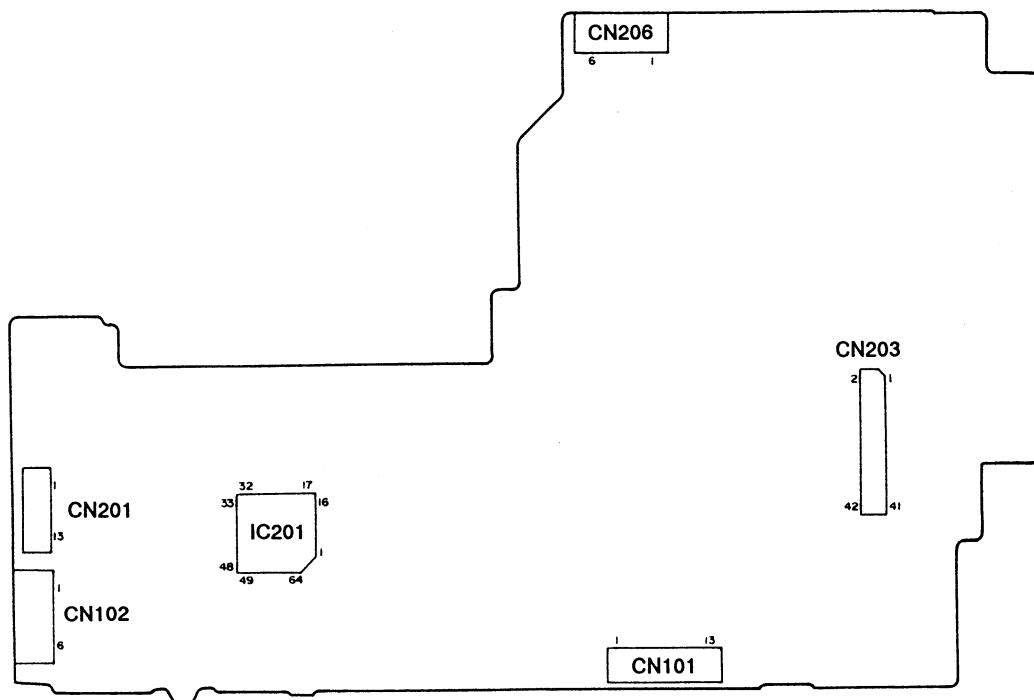
AA-100 BOARD (COMPONENT SIDE)  
(200L-TR45/TR50/TR60/TR65/TR80/TR90)



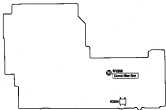
# VS BOARD (COMPONENT SIDE)



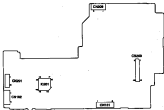
# VS BOARD (CONDUCTOR SIDE)



**VS BOARD (COMPONENT SIDE)**



**VS BOARD (CONTRACTOR SIDE)**

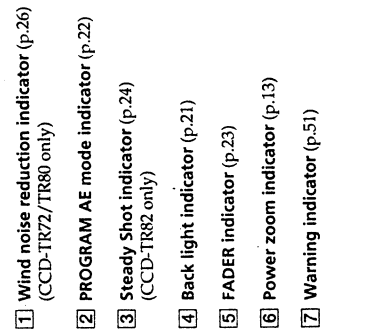







## Warning Indicators

If indicators flash in the viewfinder, or a caution lamp on the camcorder flashes, check the following:

- ♪ : You can hear the beep sound when the BEEP is set to ON.

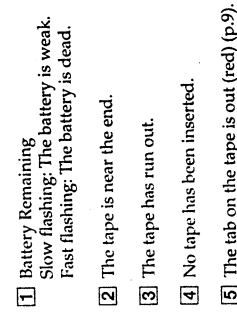


- 8** Lights up when playing back a tape recorded in LP mode (p.33)  
**9** Tape transport mode (p.11, 17)  
**10** Tape counter (p.12)  
**11** Tape remaining indicator  
  
**12** Battery remaining indicator (p.34)  
  
**13** World clock indicator (p.27)  
  
**14** Date or Time (p.20)

100

If indicators flash in the viewfinder, or a caution lamp on the camcorder flashes, check the following:

- ♪ : You can hear the beep sound when the BEEP is set to ON.



- 6 Moisture condensation has occurred (p.36).
- 7 The video heads may be contaminated (p.37).
- 8 Some other trouble has occurred.  
Disconnect the power source and contact your Sony dealer or local authorized facility.
- 9 The lithium battery is weak or the lithium battery is not installed (p.30).

# Identifying the Parts

Use the following labels to identify the parts of the circuit.

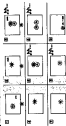


- 11. Small light bulb (labeled 7)
- 12. Large light bulb (labeled 9)
- 13. Battery (labeled 1)
- 14. Switch (labeled 8)
- 15. Wire (labeled 10)
- 16. Wire (labeled 10)
- 17. Wire (labeled 10)
- 18. Wire (labeled 10)
- 19. Wire (labeled 10)
- 20. Wire (labeled 10)

- 21. Small light bulb (labeled 7)
- 22. Large light bulb (labeled 9)
- 23. Battery (labeled 1)
- 24. Switch (labeled 8)
- 25. Wire (labeled 10)
- 26. Wire (labeled 10)
- 27. Wire (labeled 10)
- 28. Wire (labeled 10)
- 29. Wire (labeled 10)
- 30. Wire (labeled 10)

# Identifying the Parts

Use the following labels to identify the parts of the circuit.

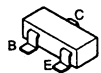


- 31. Small light bulb (labeled 7)
- 32. Large light bulb (labeled 9)
- 33. Battery (labeled 1)
- 34. Switch (labeled 8)
- 35. Wire (labeled 10)
- 36. Wire (labeled 10)
- 37. Wire (labeled 10)
- 38. Wire (labeled 10)
- 39. Wire (labeled 10)
- 40. Wire (labeled 10)

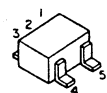
- 41. Small light bulb (labeled 7)
- 42. Large light bulb (labeled 9)
- 43. Battery (labeled 1)
- 44. Switch (labeled 8)
- 45. Wire (labeled 10)
- 46. Wire (labeled 10)
- 47. Wire (labeled 10)
- 48. Wire (labeled 10)
- 49. Wire (labeled 10)
- 50. Wire (labeled 10)

### 4-3. SEMICONDUCTORS

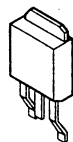
DTA123JK  
MSA1586  
MSC4116  
RN1302  
UN511D  
UN5113  
UN5213  
2SA1162  
2SA1163  
2SA1576  
2SA1838  
2SB1218  
2SB1295  
2SB1462  
2SC1623  
2SC4116  
2SC4154  
2SC4178  
2SC4400  
2SC4555  
2SC4909



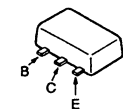
FP101  
FP102



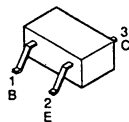
MTD6N154



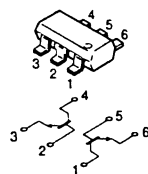
UN094  
2SB1121  
2SB1122  
2SB798  
2SD1615



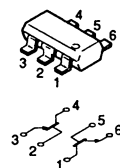
UN5111  
UN5211



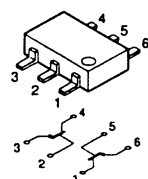
XN4113  
XN4213  
XN4501



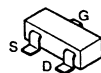
XN4312  
XN4601



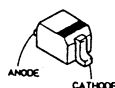
XN4401



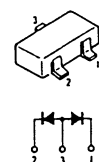
2SK1875



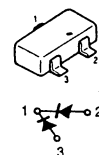
MA110  
MA111  
MA365  
1SS352



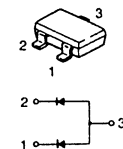
MA142WA  
MA152WA



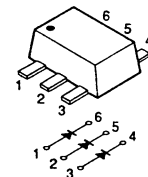
MA142WK



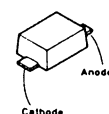
MA4Z082WA



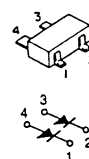
MA6S121



MA728



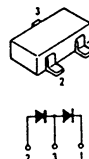
MA796



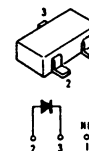
02Z13



1SS226



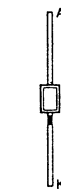
1SS250



LN1251C



LN1371G

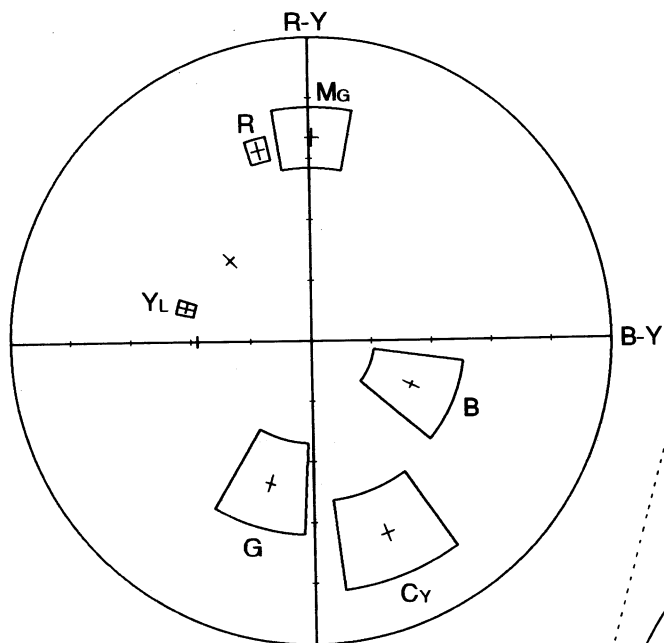




Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
M003	1-542-162-11	MICROHONE UNIT		**	AC-V25/V25A	AC POWER ADAPTOR	
M901	A-7048-564-A	DRUM ASSY (DGH-78A-R) (TR42/TR70/TR72/TR80/TR82/TR430/TR550)		***	NP-55	BATTERY PACK	
M901	A-7048-633-A	DRUM ASSY (DGH-92A-R) (TR400/TR750)		Note.			
M905	1-698-364-01	MOTOR ASSY, FOCUS (TYPE I)		**	MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.		
M906	1-698-363-01	MOTOR ASSY, ZOOM (TYPE I)		***	MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.		
M907	3-708-888-01	METER, IG (TYPE II)		*****			
M908	3-708-889-01	MOTOR ASSY, FOCUS (TYPE II)		*****			
M909	3-708-887-01	MOTOR ASSY, ZOOM (TYPE II)		HARDWARE LIST			
*****				*****			
ACCESSORIES & PACKING MATERIALS							
*****							
1-467-574-21 REMOTE COMMANDER (RMT-708)							
1-575-334-11 CORD, CONNECTION (A/V connecting cable) (TR72/TR80/TR400/TR430/TR750)							
1-575-335-21 CORD, CONNECTION (S VIDEO connecting cable) (TR400/TR750)							
3-738-517-01 BELT (S), SHOULDER							
3-758-475-21 MANUAL, INSTRUCTION (ENGLISH) (TR42/TR70/TR72/TR80/TR82)							
3-758-475-31 MANUAL, INSTRUCTION (FRENCH) (TR42/TR70:Canadian/TR80:Canadian/TR82:Canadian)							
3-758-742-21 MANUAL, INSTRUCTION (ENGLISH) (TR400)							
3-758-742-31 MANUAL, INSTRUCTION (FRENCH) (TR400:Canadian)							
3-758-782-11 MANUAL, INSTRUCTION (ENGLISH, SPANISH) (TR430/TR550)							
3-758-782-41 MANUAL, INSTRUCTION (CHINESE) (TR430/TR550:E)							
3-758-783-11 MANUAL, INSTRUCTION (ENGLISH, SPANISH) (TR750)							
3-758-783-41 MANUAL, INSTRUCTION (CHINESE) (TR750:E)							
3-758-964-11 MANUAL, INSTRUCTION (KOREAN) (TR550:Tourist/TR750:Tourist)							
*	3-795-581-21	SAFEGUARD (SONY), IMPORTANT (TR400:US/TR70:US/TR80:US/TR82:US)					
*	3-795-581-21	SAFEGUARD (SONY), IMPORTANT (TR72)					
*	3-958-198-11	INDIVIDUAL CARTON (TR400)					
*	3-958-198-31	INDIVIDUAL CARTON (TR750)					
*	3-958-663-01	INDIVIDUAL CARTON (TR82)					
*	3-958-663-11	INDIVIDUAL CARTON (TR72)					
*	3-958-663-21	INDIVIDUAL CARTON (TR42)					
*	3-958-663-31	INDIVIDUAL CARTON (TR70)					
*	3-958-663-41	INDIVIDUAL CARTON (TR80)					
*	3-958-663-71	INDIVIDUAL CARTON (TR550)					
*	3-958-663-81	INDIVIDUAL CARTON (TR430)					
*	3-958-664-01	CUSHION, (LOWER)					
*	3-958-665-01	CUSHION, ACC					
	A-6768-253-A	RFU ADAPTOR (RFU-90UC) (Except Tourist)		#1	7-627-553-47	PRECISION SCREW +P 2X4 TYPE 3	

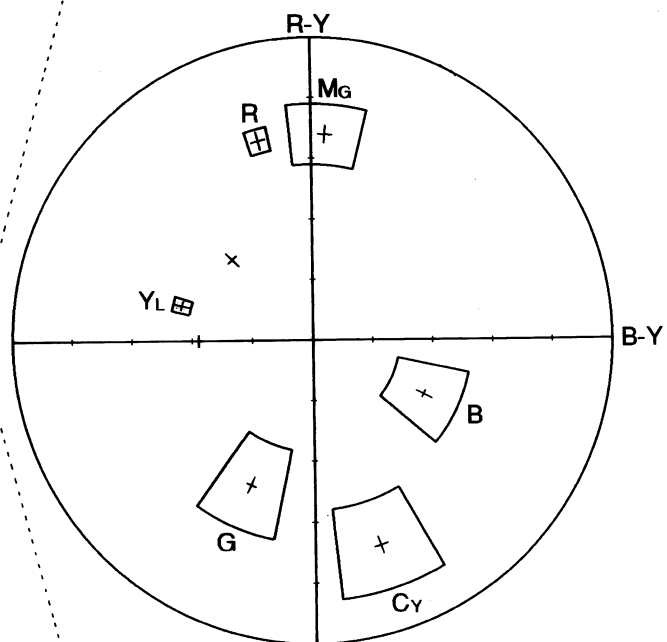
[illegible]

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT



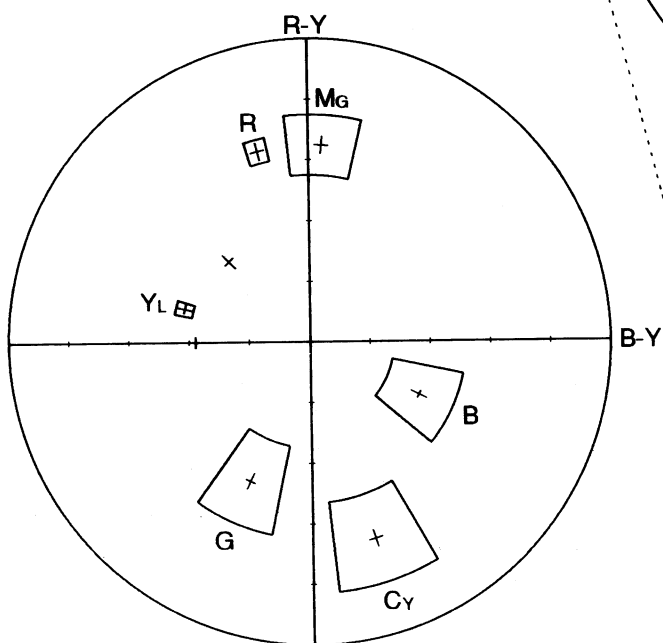
CCD-TR42/TR70/TR72/TR80/TR430

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT



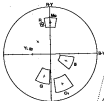
CCD-TR400/TR750

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT



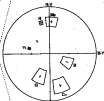
CCD-TR82/TR550

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT



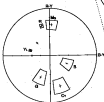
CCD-TR48T (P87710) T8817840

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT



CCD-TR480 (T8710) T8817840

FOR CAMERA COLOR REPRODUCTION ADJUSTMENT



CCD-TR480 (T8710) T8817840